STATE OF UTAH  DEPARTMENT OF NATURAL RESOURCES  DIVISION OF OIL, GAS AND MINING							FORI	_		
APPLICATION FOR PERMIT TO DRILL							1. WELL NAME and NUMBER NBU 922-31CT			
2. TYPE OF WORK  DRILL NEW WELL (	REENTER P	&A WELL ( DEEPE	EN WELL			3. FIELD OR WILDO	CAT NATURAL BUTTES			
4. TYPE OF WELL  Gas Wo	ell Coalt	ped Methane Well: NO				5. UNIT or COMMU	NITIZATION AGRE	EMENT NAME		
6. NAME OF OPERATOR KERR	-MCGEE OIL & (	GAS ONSHORE, L.P.				7. OPERATOR PHO	<b>NE</b> 720 929-6587			
8. ADDRESS OF OPERATOR P.C	. Вох 173779, [	Denver, CO, 80217				9. OPERATOR E-MA mary.m	<b>IL</b> ondragon@anadarko	.com		
10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE)		11. MINERAL OWNE	ERSHIP DIAN ( STATE		FEE (iii)	12. SURFACE OWN	ERSHIP DIAN ( STATE (	FEE (III)		
UTU-0464  13. NAME OF SURFACE OWNER (if box 12	= 'fee')					14. SURFACE OWN				
15. ADDRESS OF SURFACE OWNER (if box	12 = 'fee')					16. SURFACE OWN	ER E-MAIL (if box 1	.2 = 'fee')		
17. INDIAN ALLOTTEE OR TRIBE NAME		18. INTEND TO COM		TION	FROM	19. SLANT				
(if box 12 = 'INDIAN')			Commingling Applica	ition)	NO 📵	VERTICAL DIF	RECTIONAL ( HO	ORIZONTAL (		
20. LOCATION OF WELL	FC	OOTAGES	QTR-QTR		SECTION	TOWNSHIP	RANGE	MERIDIAN		
LOCATION AT SURFACE	389 FN	NL 1592 FWL	NENW		31	9.0 S	22.0 E	S		
Top of Uppermost Producing Zone	389 FN	NL 1592 FWL	NENW		31	9.0 S	22.0 E	S		
At Total Depth	389 FN	NL 1592 FWL	L 1592 FWL NENW 31			9.0 S	22.0 E	S		
21. COUNTY UINTAH		22. DISTANCE TO N	389			23. NUMBER OF ACRES IN DRILLING UNIT 206				
		25. DISTANCE TO N (Applied For Drilling		SAME	POOL	<b>26. PROPOSED DEPTH</b> MD: 9250 TVD: 9250				
27. ELEVATION - GROUND LEVEL 4882		28. BOND NUMBER	WYB000291	29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE Permit #43-8496			F APPLICABLE			
		A <sup>-</sup>	TTACHMENTS							
VERIFY THE FOLLOWING	ARE ATTACH	HED IN ACCORCAN	CE WITH THE U	ITAH (	OIL AND G	AS CONSERVATI	ON GENERAL RU	LES		
WELL PLAT OR MAP PREPARED BY	LICENSED SUF	RVEYOR OR ENGINEE	R	MPLET	E DRILLING	PLAN				
AFFIDAVIT OF STATUS OF SURFACE	OWNER AGRE	EEMENT (IF FEE SURF	FACE) FOF	RM 5. I	F OPERATOR	R IS OTHER THAN T	HE LEASE OWNER			
DIRECTIONAL SURVEY PLAN (IF DIRECTIONALLY OR HORIZONTALLY TOPOGRAPHICAL MAP										
NAME Kevin McIntyre TITLE Regulatory Analyst I					PHONE 72	0 929-6226				
SIGNATURE DATE 12/02/2008					EMAIL Kev	rin.McIntyre@anadark	o.com			
<b>API NUMBER ASSIGNED</b> 43047502260000	AF	PPROVAL			Book	OGILL				
Per					Perm	rmit Manager				

API Well No: 43047502260000

	Proposed Hole, Casing, and Cement							
String	Hole Size	Casing Size	Top (MD)	Bottom (MD)				
Surf	12.25	9.625	0	2250				
Pipe	Grade	Length	Weight					
	Grade J-55 LT&C	2250	36.0					

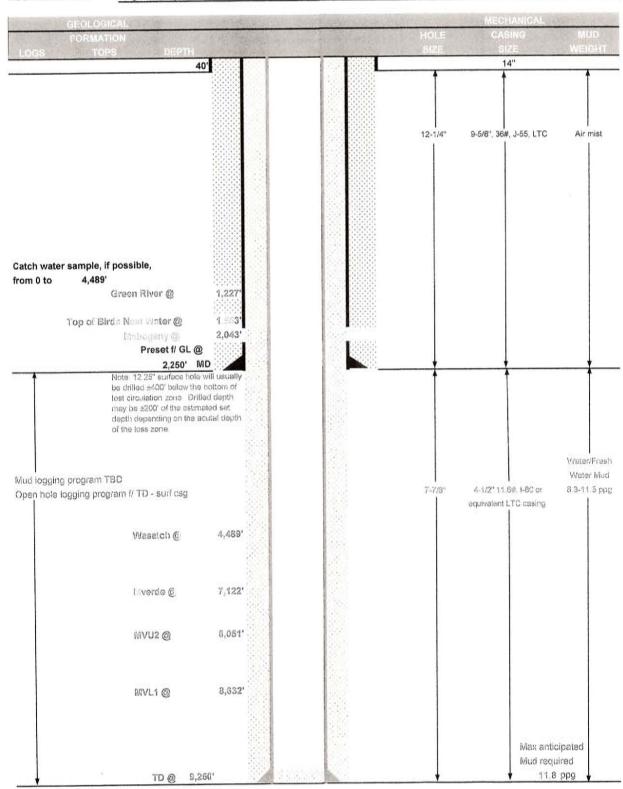
API Well No: 43047502260000

	Proposed Hole, Casing, and Cement						
String	Hole Size	Casing Size	Top (MD)	Bottom (MD)			
Prod	7.875	4.5	0	9250			
Pipe	Grade	Length	Weight				
	Grade I-80 LT&C	9250	11.6				



### KERR-McGEE OIL & GAS ONSHORE LP DRILLING PROGRAM

COMPANY NAME K		KERR-McGE	E OIL & GAS ON	SHORE LP		DATE	Nove	emb	er 7, 2008		
WELL N	AME .	NBU 922-	31CT			TD	9,25	0'	MD/TVD		
FIELD	Natural Butt	es	COUNTY Uinta	h	STATE	Utah	ELEVAT	ION	4,882' GL	K	3 4,897'
SURFACE LOCATION			9' FNL & 1592' F\	WL Sec. 31,	T9S, R2	2E			X-5	BHL	Straight Hole
		Latitude:	39.998717	Longitude	: -10	9.484283			NAD 27		-
OBJECT	IVE ZONE(S)		Vlesaverde								
ADDITIO	NAL INFO	Regulator	y Agencies: BLM	(Surface & N	/linerals),	UDOGM, Tri-	County Health	Dep	ot.		









# KERR-McGEE OIL & GAS ONSHORE LP DRILLING PROGRAM

### CASING PROGRAM

						DESIGN FACTORS				
	SIZE	98 M	NTERV	A)L	WT.	GR.	CPLG.	BURST	COLLAPSE	TENSION
CONDUCTOR	14"		0-40'					3520	2020	453000
SURFACE	9-5/8"	0	to	2,250'	36.00	J-55	LTC	0.97 7780	1.92 6350	6,39 201000
PRODUCTION	4-1/2"	0	to	9250	11.60	1-80	LTC	2.14	1.12	2.15

<sup>1)</sup> Max Anticipated Surf. Press.(MASP) (Surface Casing) = (Pore Pressure at next csg point-(0.22 psi/ft-partial evac gradient x TVD of next csg point)

MASP (Prod Casing) = Pore Pressure at TD - (.22 psi/ft-partial evac gradient x TD)

.22 psi/ft = gradient for partially evac wellbore

(Burst Assumptions: TD = 11.8 ppg)
(Collapse Assumption: Fully Evacuated Casing, Max MW)

(Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

MASP 3700 psi

### CEMENT PROGRAM

	ī	ET OF EIL	DESCRIPTION	SACKS	EXCESS	WEIGHT	YIELD
SURFACE	LEAD	500	Premium cmt + 2% CaCi + .25 pps flocele	215	60%	15.60	1.18
Option 1	TOP OUT CMT (1)	250	20 gals sodium silicate + Premium cmt + 2% CaCl + .25 pps flocele	100		15.60	1.18
	TOP OUT CMT (2)	as required	Premium cmt + 2% CaCl	as req.		15.60	1.18
BUT POADU			South the work will all the falls while twenty	manufall he	2 (4)	Total Control	
(1) 41 m 1	v. 135	9660	Through the Both Bill of Backlin and plant and a state of AVIII	547	G154	11.67	5.6
	(6),	94	Regionalist of Sets.	180	20%	20.7%	
	Professional	can you say that	Planting and other fields	VIII - 222		50.01	
PRODUCTI	ON LEAD	3,980'	Premium Lite II + 3% KCI + 0.25 pps celloflake + 5 pps gilsonite + 10% gel + 0.5% extender	440	60%	11,00	3.38
	YAIL.	5,270'	50/50 Pox/G ÷ 10% salt ÷ 2% gel +.1% R-9	1470	60%	14.30	1.31

<sup>\*</sup>Substitute caliper hole volume plus 0% excess for LEAD if accurate caliper is obtained

### FLOAT EQUIPMENT & CENTRALIZERS

SURFACE	Guide shoe, 1 jt, insert float. Centralize first 3 joints with bow spring centralizers. Thread lock guide shoe.	
PRODUCTION	Float shoe, 1 jt, float collar. Centralize first 3 joints & every third joint to top of tall cement with bow spring centralizers.	

### ADDITIONAL INFORMATION

DRILLING SUPERINTENDENT:

Randy Bayne

DRILLING

ENGINEER:	Brad Laney			DATE:	
Most rigs have PVT Systems	or mud monitoring. If no PV	/T is available, visual monitorio	ng will be utilized		
Drop Totco surveys every 20					
& lower kelly valves.					
tour sheet. Function test ram	on each trip. Maintain saf	ety valve & inside BOP on rig	loor at all times.	Kelly to be equipped with upper	
BOPE: 11" 5M with one ann	ar and 2 rams. Test to 5,00	00 psi (annular to 2,500 psi) p	for to drilling out	Record on chart recorder &	
Fest casing head to 750 psi a	ter installing. Test surface	casing to 1,500 psi prior to dri	lling out.		

NBU 922-31CT.xls

DATE:

<sup>&</sup>quot;Substitute caliper hole volume plus 10% excess for TAIL if accurate caliper is obtained

### NBU 922-31CT Twin to NBU #354 NENW Sec. 31, T9S,R22E UINTAH COUNTY, UTAH UTU-0464

### **ONSHORE ORDER NO. 1**

### DRILLING PROGRAM

### 1. Estimated Tops of Important Geologic Markers:

<u>Formation</u>	<u>Depth</u>
Uinta	0- Surface
Green River	1227
Bird's Nest	1553'
Mahogany	2043'
Wasatch	4489'
Mesaverde	7122'
MVU2	8051'
MVL1	8632'
TD	9250'

### 2. Estimated Depths of Anticipated Water, Oil, Gas, or Mineral Formations:

Substance	<b>Formation</b>	Depth
	Green River	1227'
	Bird's Nest	1553'
	Mahogany	2043
Gas	Wasatch	4489'
Gas	Mesaverde	7122'
Gas	MVU2	8051'
Gas	MVL1	8632'
Water	N/A	
Other Minerals	N/A	

### 3. Pressure Control Equipment (Schematic Attached)

Please see the Natural Buttes Unit Standard Operating Procedure (SOP).

### 4. Proposed Casing & Cementing Program:

Please see the Natural Buttes Unit SOP.

### 5. <u>Drilling Fluids Program:</u>

Please see the Natural Buttes Unit SOP.

### 6. Evaluation Program:

Please see the Natural Buttes Unit SOP.

### 7. Abnormal Conditions:

Maximum anticipated bottomhole pressure calculated at 9250' TD, approximately equals 5735 psi (calculated at 0.62 psi/foot).

Maximum anticipated surface pressure equals approximately 3700 psi (bottomhole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot).

### 8. Anticipated Starting Dates:

Drilling is planned to commence immediately upon approval of this application.

### 9. Variances:

Please see Natural Buttes Unit SOP Onshore Order #2 – Air Drilling Variance Kerr-McGee Oil & Gas Onshore LP (KMG) respectfully requests a variance to several requirements associated with air drilling outlined in Onshore Order 2

- Blowout Prevention Equipment (BOPE) requirements;
- Mud program requirements; and
- Special drilling operation (surface equipment placement) requirements associated with air drilling.

This Standard Operating Practices addendum provides supporting information as to why KMG current air drilling practices for constructing the surface casing hole should be granted a variance to Onshore Order 2 air drilling requirements.

The reader should note that the air rig is used only to construct a stable surface casing hole through a historically difficult lost circulation zone. A conventional rotary rig follows the air rig, and is used to drill and construct the majority of the wellbore.

More notable, KMG has used the air rig layout and procedures outlined below to drill the surface casing hole in approximately 675 wells without incident of blow out or loss of life.

### Background

In a typical well, KMG utilizes an air rig for drilling the surface casing hole, an interval from the surface to surface casing depths, which varies in depth from 1,700 to 2,800 feet. The air rig drilling operation does not drill through productive or over pressured formations in KMG field, but does penetrate the Uinta and Green River Formations. The purpose of the air drilling operation is to overcome the severe loss circulation zone in the Green River known as the Bird's Nest while creating a stable hole for the surface casing. The surface casing hole is generally drilled to approximately 500 feet below the Bird's Nest.

Before the surface air rig is mobilized, a rathole rig is utilized to set and cement conductor pipe through a competent surface formation. Generally, the conductor is set at 40 feet. In some cases, conductor may be set deeper in areas that the surface formation is not found competent. This rig also drills the rat and mouse holes in preparation for the surface casing and production string drilling operations.

The air rig is then mobilized to drill the surface casing hole by drilling a 12-1/4 inch hole to just above the Bird's Nest interval with an air hammer. The hammer is then tripped and replaced with a 12-1/4 inch tri-cone bit. The tri-cone bit is used to drill to the surface casing point, approximately 500 feet below the loss circulation zone (Bird's Nest). The 9-5/8 inch surface casing is then run and cemented in place, thereby isolating the lost circulation zone.

KMG fully appreciates Onshore Order 2 well control and safety requirements associated with a typical air drilling operations. However, the requirements of Onshore Order 2 are excessive with respect to the air rig layout and drilling operation procedures that are currently in practice to drill and control the surface casing hole in KMG Fields.

### Variance for BOPE Requirements

The air rig operation utilizes a properly lubricated and maintained air bowl diverter system which diverts the drilling returns to a six-inch blooie line. The air bowl is the only piece of BOPE equipment which is installed during drilling operations and is sufficient to contain the air returns associated with this drilling operation. As was discussed earlier, the drilling of the surface hole does not encounter any over pressured or productive zones, and as a result standard BOPE equipment should not be required. In addition, standard drilling practices do not support the use of BOPE on 40 feet of conductor pipe.

### Variance for Mud Material Requirements

Onshore Order 2 also states that sufficient quantities of mud materials shall be maintained or readily accessible for the purpose of assuring adequate well control. Once again, the surface hole drilling operations does not encounter over pressured or productive intervals, and as a result there is not a need to control pressure in the surface hole with a mud system. Instead of mud, the air rigs utilize water from the reserve pit for well control, if necessary. A skid pump which is located near the reserve pit (see attachment) will supply the water to the well bore.

Variance for Special Drilling Operation (surface equipment placement) Requirements Onshore Order 2 requires specific safety distances or setbacks for the placement of associated standard air drilling equipment, wellbore, and reserve pits. The air rigs used to drill the surface holes are not typical of an air rig used to drill a producing hole in other parts of the US. These are smaller in nature and designed to fit a KMG location. The typical air rig layout for drilling surface hole in the field is attached.

Typically the blooie line discharge point is required to be 100 feet from the well bore. In the case of a KMG well, the reserve pit is only 45 feet from the rig and is used for the drill cuttings. The blooie line, which transports the drill cuttings from the well to the reserve pit, subsequently discharges only 45 feet from the well bore.

Typically the air rig compressors are required to be located in the opposite direction from the blooie line and a minimum of 100 feet from the well bore. At the KMG locations, the air rig compressors are approximately 40 feet from the well bore and approximately 60 feet from the blooie line discharge due to the unique air rig design. The air compressors (see attachment) are located on the rig (1250 cfm) and on a standby trailer (1170 cfm). A booster sits between the two compressors and boosts the output from 350 psi to 2000 psi. The design does put the booster and standby compressor opposite from the blooie line.

Lastly, Onshore Order 2 addresses the need for an automatic igniter or continuous pilot light on the blooie line. The air rig does not utilize an igniter as the surface hole drilling operation does not encounter productive formations.

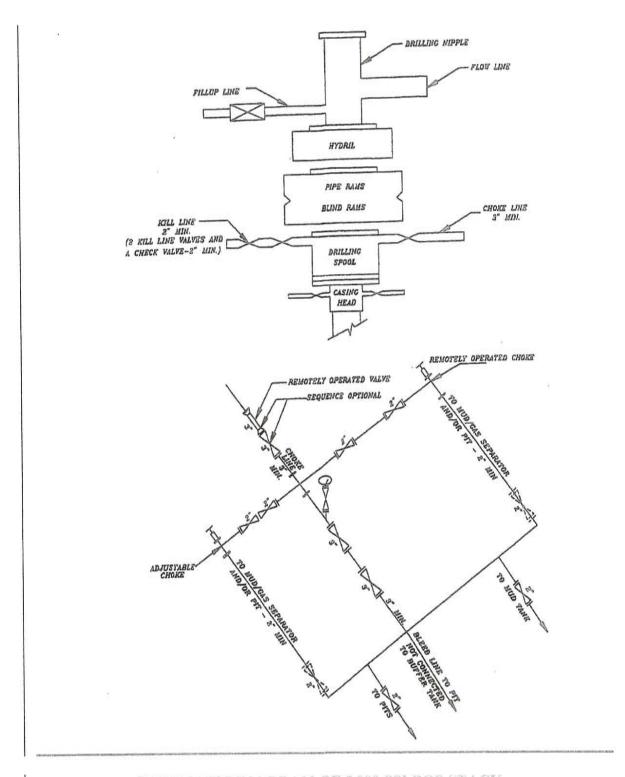
### Conclusion

The air rig operating procedures and the attached air rig layout have effectively maintained well control while drilling the surface holes in KMG Fields. KMG respectfully requests a variance from Onshore Order 2 with respect to air drilling well control requirements as discussed above..

### 10. Other Information:

Please see Natural Buttes Unit SOP.

### **EXHIBIT A**



### NBU 922-31CT Twin to NBU #354 NENW Sec. 31 ,T9S,R22E UINTAH COUNTY, UTAH UTU-0464

### ONSHORE ORDER NO. 1

## MULTI-POINT SURFACE USE & OPERATIONS PLAN

### 1. Existing Roads:

Refer to the attached location directions.

Refer to Topo Maps A and B for location of access roads within a 2-mile radius.

### 2. Planned Access Roads:

No new access road is planned, as this is a twin location. Refer to Topo Map B.

Existence of pipelines; maximum grade; turnouts; major cut and fills, culverts, or bridges; gates, cattle guards, fence cuts, or modifications to existing facilities were determined at the on-site.

Please see the Natural Buttes Unit Standard Operating Procedure (SOP).

### 3. Location of Existing Wells Within a 1-Mile Radius:

Please refer to Topo Map C.

### 4. Location of Existing & Proposed Facilities:

No new pipeline, as we will be utilizing the existing NBU #354 pipeline. No TOPO D attached.

Please see the Natural Buttes Unit SOP.

### Variances to Best Management Practices (BMPs) Requested:

All facilities will be painted within six months of installation. Facilities required to comply with the Occupational Safety and Health Act (OSHA) will be excluded. The requested color is Shadow Gray (2.5Y 6/2), a non-reflective earthtone.

Interim Surface Reclamation Plan:

This exception is requested due to the current twin and multi-well program. If determined that this well will not be a candidate for either twinning &/or multi-well the operator shall spread the topsoil pile on the location up to the rig anchor points. The location will be reshaped to the

original contour to the extent possible. The operator will reseed the area using the BLM recommended seed mixture and reclamation methods.

### 5. Location and Type of Water Supply:

Please see the Natural Buttes SOP.

### 6. Source of Construction Materials:

Please see the Natural Buttes SOP.

### 7. Methods of Handling Waste Materials:

Please see the Natural Buttes SOP.

A plastic reinforced liner is to be used as discussed during on-site inspection. It will be a minimum of 20 mil thick and felt, with sufficient bedding used to cover any rocks. The liner will overlap the pit walls and be covered with dirt and/or rocks to hold it in place. No trash or scrap that could puncture the liner will be disposed of in the pit.

Any produced water from the proposed well will be contained in a water tank and will then be hauled by truck to one of the pre-approved disposal sites: RNI, Sec. 5, T9S, R22E, NBU #159, Sec. 35, T9S R21E, Ace Oilfield, Sec. 2, T6S, R20E, MC&MC, Sec. 12, T6S, R19E, Pipeline Facility Sec. 36, T9S, R20E, Goat Pasture Evaporation Pond SW/4 Sec. 16, T10S, R22E, Bonanza Evaporation Pond Sec. 2, T10S, R23E (Request is in lieu of filing Form 3160-5, after initial production).

### 8. Ancillary Facilities:

Please see the Natural Buttes SOP.

### Well Site Layout: (See Location Layout Diagram)

The attached Location Layout Diagram describes drill pad layout and locations of the mud tanks, reserve pit, flare pit, pipe racks, trailer parking, spoil dirt stockpile(s), and surface material stockpile(s). The cross-section is not necessary, as it identical to the twin location of NBU #354. If necessary, please reference the cross section for NBU #354.

Please see the attached diagram to describe rig orientation, parking areas, and access roads.

Location size may change prior to the drilling of the well due to the current rig availability. If the proposed location is not large enough to accommodate the drilling rig. The location will be resurveyed and a form 3160-5 will be submitted.

### 10. Plans for Reclamation of the Surface:

Please see the Natural Buttes SOP.

Operator shall call the BLM for the seed mixture when final reclamation occurs.

### 11. Surface/Mineral Ownership:

The well pad, access road, pipeline and mineral ownership are listed below:

United States of America Bureau of Land Management 170 South 500 East Vernal, UT 84078 (435)781-4400

### 12. Stipulations/Notices/Mitigation

No stipulations or Notices for this location.

### 13. Other Information:

A Class III archaeological survey and a paleontological survey have been performed and will be submitted.

This location is not within 460' from the boundary of the Natural Buttes Unit, nor is it within 460' of any non-committed tract lying within the boundaries of the Unit.

### 14. Lessee's or Operator's Representative & Certification:

Kevin McIntyre Regulatory Analyst Kerr-McGee Oil & Gas Onshore LP P.O. Box 173779 Denver, CO 80217-3779 (720) 929-6226 Randy Bayne Drilling Manager Kerr-McGee Oil & Gas Onshore LP 1368 South 1200 East Vernal, UT 84078 (435) 781-7018

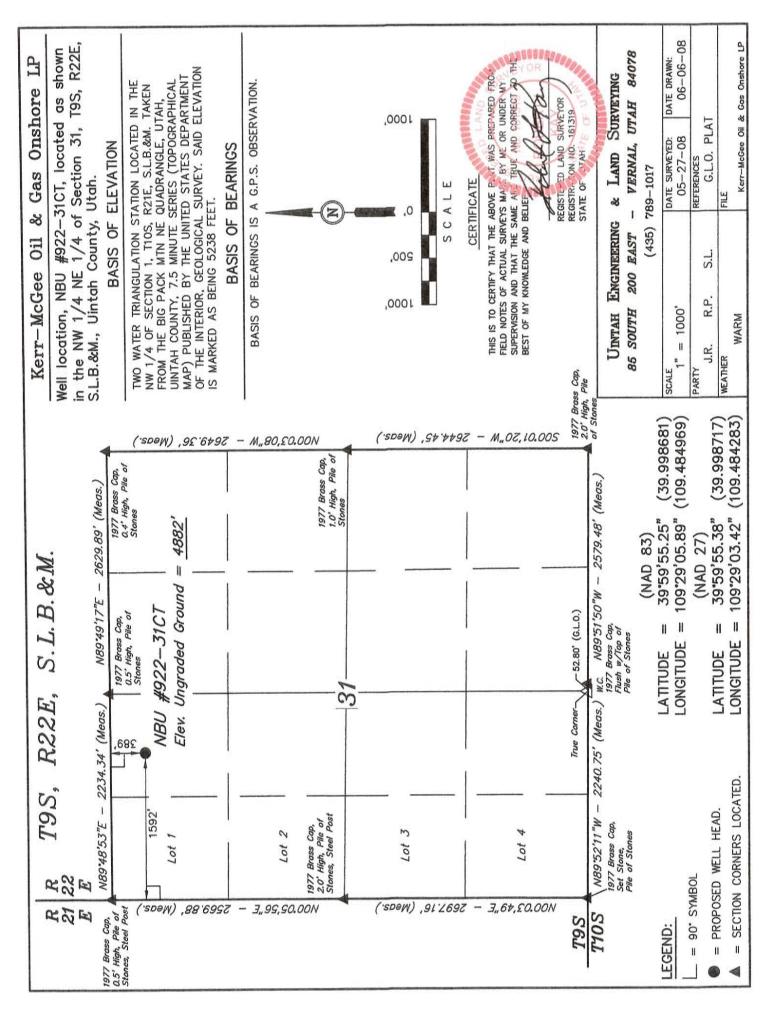
Certification: All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations, Onshore Oil and Gas Orders, the approved Plan of Operations, and any applicable Notice to Lessees.

Kerr-McGee Oil & Gas Onshore LP is considered to be the operator of the subject well. Kerr-McGee Oil & Gas Onshore LP agrees to be responsible under the terms and conditions of the lease for the operations conducted upon leased lands.

The Operator will be fully responsible for the actions of its subcontractors. A complete copy of the approved "Application for Permit to Drill" will be furnished to the field representative(s) to ensure compliance and shall be on location during all construction and drilling operations.

Bond coverage pursuant to 43 CFR 3104 for lease activities is being provided by BLM Nationwide Bond #WYB000291.

I hereby certify that I, or persons under my supervision, have inspected the proposed drill site and access route, that I am familiar with the conditions that currently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and the work associated with the operations proposed herein will be performed by the Operator, its contractors, and subcontractors in conformity with this plan and the terms and conditions under which it is approved.



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Counte

# Kerr-McGee Oil & Gas Onshore LP NBU #922-31CT SECTION 31, T9S, R22E, S.L.B.&M.

PROCEED IN A WESTERLY DIRECTION FROM VERNAL, UTAH ALONG U.S. HIGHWAY 40 APPROXIMATELY 14.0 MILES TO THE JUNCTION OF STATE HIGHWAY 88; EXIT LEFT AND PROCEED IN A SOUTHERLY DIRECTION APPROXIMATELY 17.0 MILES TO OURAY, UTAH; PROCEED IN A SOUTHERLY DIRECTION APPROXIMATELY 6.9 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE SOUTHEAST; TURN LEFT AND PROCEED IN A SOUTHEASTERLY, THEN EASTERLY DIRECTION APPROXIMATELY 5.0 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHWEST; TURN LEFT AND PROCEED IN A NORTHWESTERLY DIRECTION APPROXIMATELY 0.3 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHEAST; TURN RIGHT AND PROCEED IN A NORTHEASTERLY DIRECTION APPROXIMATELY 3.8 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHEAST: PROCEED IN A NORTHEASTERLY DIRECTION APPROXIMATELY 0.9 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE SOUTHWEST; TURN RIGHT AND PROCEED IN A SOUTHWESTERLY, THEN SOUTHEASTERLY DIRECTION APPROXIMATELY 2.7 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHEAST: TURN LEFT AND PROCEED IN A NORTHEASTERLY, THEN EASTERLY DIRECTION APPROXIMATELY 0.3 MILES NBU #354 AND THE PROPOSED LOCATION.

TOTAL DISTANCE FROM VERNAL, UTAH TO THE PROPOSED WELL LOCATION IS APPROXIMATELY 50.9 MILES.

# Kerr-McGee Oil & Gas Onshore LP

NBU #922-31CT

LOCATED IN UINTAH COUNTY, UTAH SECTION 31, T9S, R22E, S.L.B.&M.



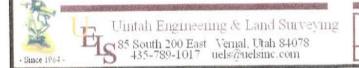
PHOTO: VIEW FROM PIT CORNER "D" TO LOCATION STAKE

CAMERA ANGLE: SOUTHERLY

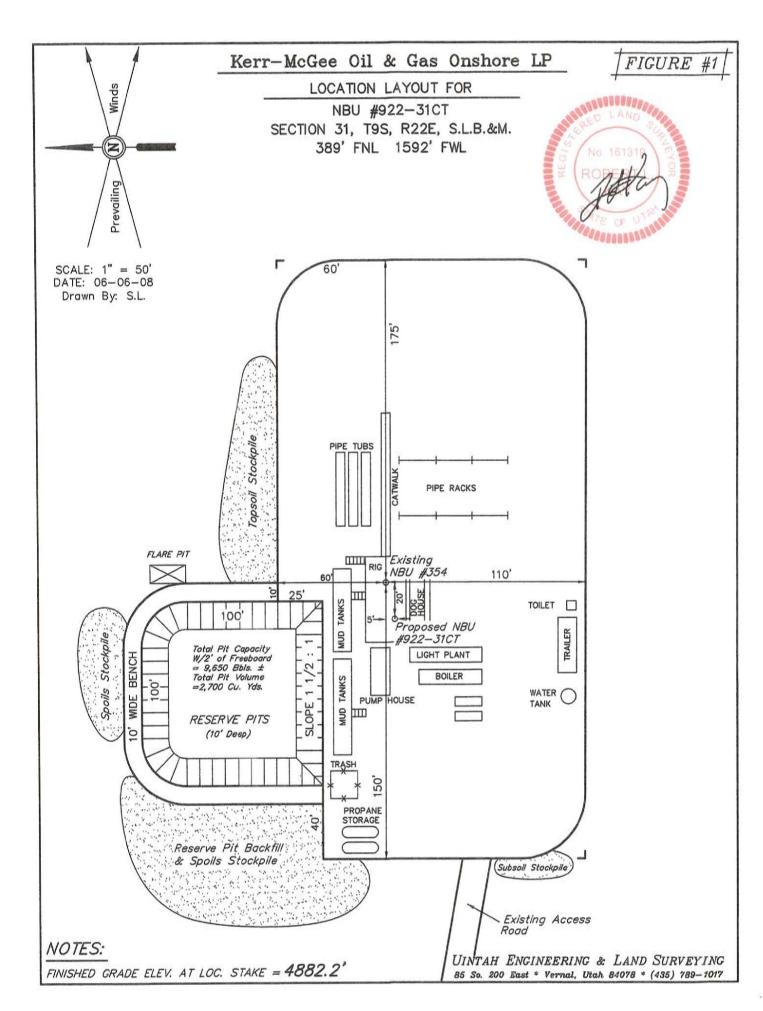


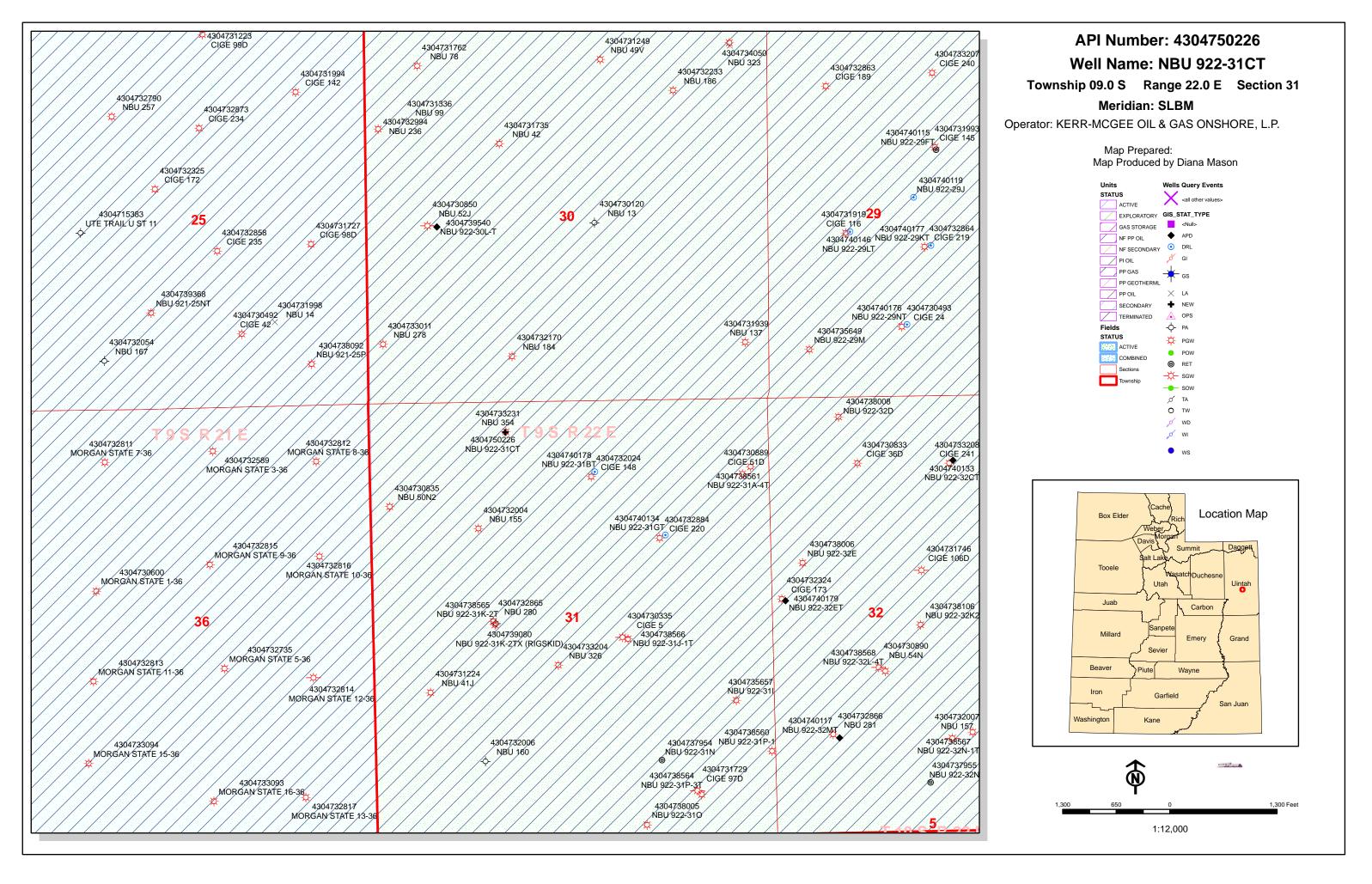
PHOTO: VIEW OF EXISTING ACCESS

CAMERAANGLE: EASTERLY



LOCATION PHOTOS		06 MONTH	13 DAY	O8 YEAR	PHOTO
TAKEN BY: L.K.	DRAWN BY: S.	L. REV	ISED: (	0-00-00	





# **United States Department of the Interior**

### **BUREAU OF LAND MANAGEMENT**

Utah State Office
P.O. Box 45155
Salt Lake City, Utah 84145-0155

IN REPLY REFER TO: 3160 (UT-922)

November 21, 2008

### Memorandum

To: Assistant District Manager Minerals, Vernal District

From: Michael Coulthard, Petroleum Engineer

Subject: 2008 Plan of Development Natural Buttes Unit

Uintah County, Utah.

Pursuant to email between Diana Whitney, Division of Oil, Gas and Mining, and Mickey Coulthard, Utah State Office, Bureau of Land Management, the following wells are planned for calendar year 2008 within the Natural Buttes Unit, Uintah County, Utah.

API # WELL NAME LOCATION

(Proposed PZ WASATCH-MESA VERDE)

43-047-50224 NBU 1022-14H4S Sec 14 T10S R22E 1229 FNL 1397 FEL BHL Sec 14 T10S R22E 2045 FNL 0600 FEL

43-047-50225 NBU 1022-14H1S Sec 14 T10S R22E 1231 FNL 1357 FEL BHL Sec 14 T10S R22E 1560 FNL 0600 FEL

43-047-50227 NBU 1022-14A4S Sec 14 T10S R22E 1230 FNL 1377 FEL BHL Sec 14 T10S R22E 0825 FNL 0600 FEL

43-047-50228 NBU 1022-14A1S Sec 14 T10S R22E 1228 FNL 1417 FEL BHL Sec 14 T10S R22E 0345 FNL 0600 FEL

43-047-50226 NBU 922-31CT Sec 31 T09S R22E 0389 FNL 1592 FWL

This office has no objection to permitting the wells at this time.

/s/ Michael L. Coulthard

bcc: File - Natural Buttes Unit
 Division of Oil Gas and Mining

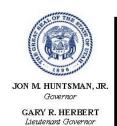
Central Files Agr. Sec. Chron Fluid Chron

MCoulthard:mc:11-21-08

### WORKSHEET APPLICATION FOR PERMIT TO DRILL

APD RECEIVED:	11/17/2008	API NO. ASSIGNED:	43047502260000
WELL NAME:	NBU 922-31CT		
OPERATOR:	KERR-MCGEE OIL & GAS ONS	HORE, L.P. (N2995) PHONE NUMBER:	720 929-6226
	Kevin McIntyre		
DDODOSED I OCATION.	NENW 21 000C 220E	Downit Took Daview	
PROPOSED LOCATION:	NEINW 31 0905 220E	Permit Tech Review:	
SURFACE:	0389 FNL 1592 FWL	Engineering Review:	
			<u>                                     </u>
воттом:	0389 FNL 1592 FWL	Geology Review:	
COUNTY:	LIINTAL		,
LATITUDE:		LONGITUDE:	-100 48417
UTM SURF EASTINGS:		NORTHINGS:	
	NATURAL BUTTES	NORTHINGS.	4420314.00
LEASE TYPE:			
LEASE NUMBER:		PROPOSED FORMATION:	WSMVD
SURFACE OWNER:		COALBED METHANE:	
RECEIVED AND/OR REVI	EWED:	LOCATION AND SITING:	
r PLAT		R649-2-3.	
		,	
<b>Bond:</b> FEDERAL - WYE	3000291	Unit: NATURAL BUTTES	
Potash		R649-3-2. General	
_			
✓ Oil Shale 190-5			
Oil Shale 190-3		R649-3-3. Exception	
Oil Shale 190-13		✓ Drilling Unit	
<b>✓ Water Permit:</b> Permit	t #43-8496	Board Cause No: Cause 173-14	
RDCC Review:		Effective Date: 12/2/1999	
Fee Surface Agreem	ent	<b>Siting:</b> 460' fr u bdry & uncomm. tract	
Intent to Commingle	e	R649-3-11. Directional Drill	
Comments: Presite 0	Completed		
Stipulations: 4 - Fed	eral Approval - dmason		
17 - 011	Shale 190-5(b) - dmason		

API Well No: 43047502260000



## State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER

Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA
Division Director

### Permit To Drill

\*\*\*\*\*\*

Well Name: NBU 922-31CT **API Well Number:** 43047502260000

Lease Number: UTU-0464 Surface Owner: FEDERAL Approval Date: 12/4/2008

### **Issued to:**

KERR-MCGEE OIL & GAS ONSHORE, L.P., P.O. Box 173779, Denver, CO 80217

### **Authority:**

Pursuant to Utah Code Ann. §40-6-1 et seq., and Utah Administrative Code R649-3-1 et seq., the Utah Division of Oil, Gas and Mining issues conditions of approval, and permit to drill the listed well. This permit is issued in accordance with the requirements of Cause 173-14.

### **Duration:**

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date

### General:

Compliance with the requirements of Utah Admin. R. 649-1 et seq., the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

### **Conditions of Approval:**

State approval of this well does not supercede the required federal approval, which must be obtained prior to drilling.

In accordance with the Order in Cause No. 190-5(b) dated October 28, 1982, the operator shall comply with the requirements of Rules R649-3-31 and R649-3-27 pertaining to Designated Oil Shale Areas. Additionally, the operators shall ensure that the surface and or production casing is properly cemented over the entire oil shale section as defined by Rule R649-3-31. The Operator shall report the actual depth the oil shale is encountered to the division.

### **Notification Requirements:**

Notify the Division with 24 hours of spudding the well.

• Contact Carol Daniels at (801) 538-5284.

Notify the Division prior to commencing operations to plug and abandon the well.

• Contact Dustin Doucet at (801) 538-5281 office (801) 733-0983 home

API Well No: 43047502260000

### **Reporting Requirements:**

All required reports, forms and submittals will be promptly filed with the Division, including but not limited to the Entity Action Form (Form 6), Report of Water Encountered During Drilling (Form 7), Weekly Progress Reports for drilling and completion operations, and Sundry Notices and Reports on Wells requesting approval of change of plans or other operational actions.

**Approved By:** 

For Gil Hunt

Associate Director, Oil & Gas

STATE OF UTAH  DEPARTMENT OF NATURAL RESOURCES  DIVISION OF OIL, GAS, AND MINING			FORM 9	
			5.LEASE DESIGNATION AND SERIAL NUMBER: UTU-0464	
SUNDRY NOTICES AND REPORTS ON WELLS			6. IF INDIAN, ALLOTTEE OR TRIBE NAME:	
Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.			7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES	
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 922-31CT	
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONSHORE, L.P.			<b>9. API NUMBER:</b> 43047502260000	
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779  PHONE NUMBER: 720 929-6587 Ext			9. FIELD and POOL or WILDCAT: NATURAL BUTTES	
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0389 FNL 1592 FWL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NENW Section: 31 Township: 09.0S Range: 22.0E Meridian: S			COUNTY: UINTAH	
			STATE: UTAH	
11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA				
TYPE OF SUBMISSION	TYPE OF ACTION			
	ACIDIZE	ALTER CASING	CASING REPAIR	
NOTICE OF INTENT Approximate date work will start:	✓ CHANGE TO PREVIOUS PLANS	CHANGE TUBING	CHANGE WELL NAME	
5/21/2009	☐ CHANGE WELL STATUS	COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE	
SUBSEQUENT REPORT	DEEPEN	FRACTURE TREAT	☐ NEW CONSTRUCTION	
Date of Work Completion:	OPERATOR CHANGE	PLUG AND ABANDON	PLUG BACK	
	PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION	
SPUD REPORT	REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	TEMPORARY ABANDON	
Date of Spud:		VENT OR FLARE		
	L TUBING REPAIR		☐ WATER DISPOSAL	
DRILLING REPORT Report Date:		SI TA STATUS EXTENSION	APD EXTENSION	
	WILDCAT WELL DETERMINATION	OTHER	OTHER:	
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.  Kerr-McGee Oil & Gas Onshore LP (KMG) respectfully requests to change the surface location of this well. The surface location is changing FROM: 389' FNL 1592' FWL TO: 389' FNL 1632' FWL. All other information as originally submitted remains the same. No additional surface disturbance from that amount approved in the original APD is anticipated. If you have any questions, please contact the undersigned. Thank you.  Date: May 19, 2009  By:				
NAME (PLEASE PRINT) Danielle Piernot	<b>PHONE NUMBER</b> 720 929-6156	TITLE Regulatory Analyst		
SIGNATURE	\\SQ 353-0120	DATE		
N/A		5/18/2009		

# Kerr-McGee Oil & Gas Onshore LP

NBU #922-31CT

LOCATED IN UINTAH COUNTY, UTAH SECTION 31, T9S, R22E, S.L.B.&M.



PHOTO: VIEW FROM PIT CORNER "D" TO LOCATION STAKE

CAMERA ANGLE: SOUTHERLY



PHOTO: VIEW OF EXISTING ACCESS

CAMERA ANGLE: EASTERLY



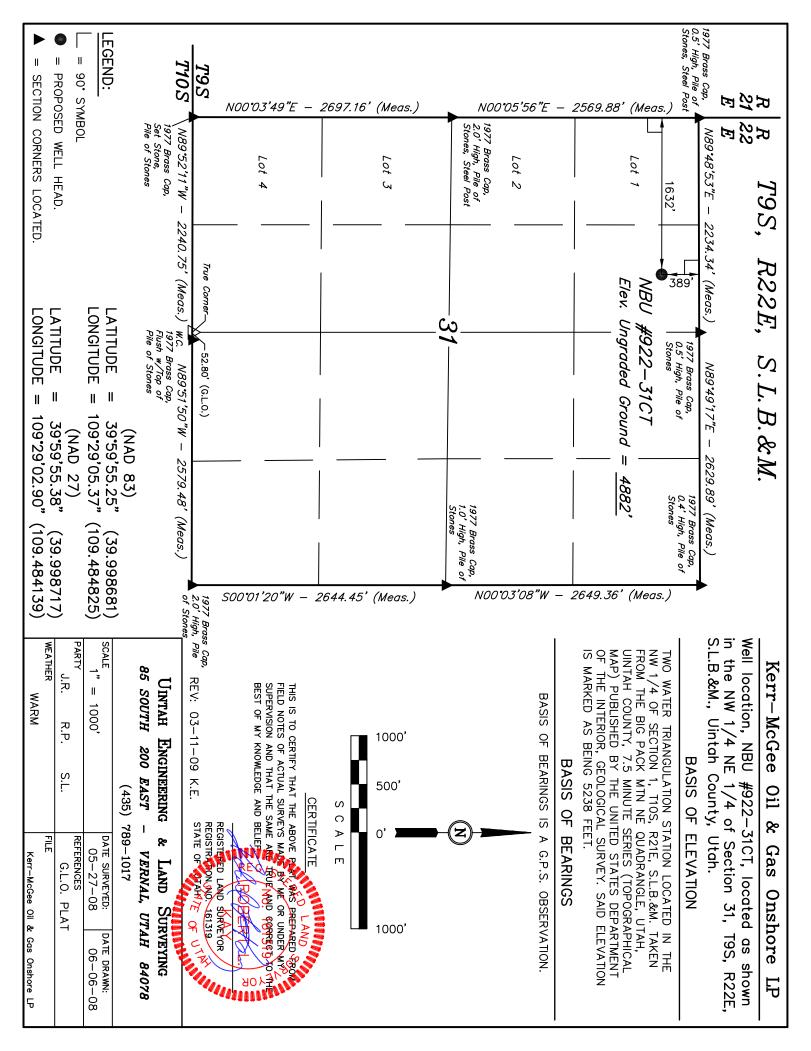
Uintah Engineering & Land Surveying 85 South 200 East Vernal, Utah 84078 435-789-1017 Vernal, Utah 84078 uels@uelsinc.com

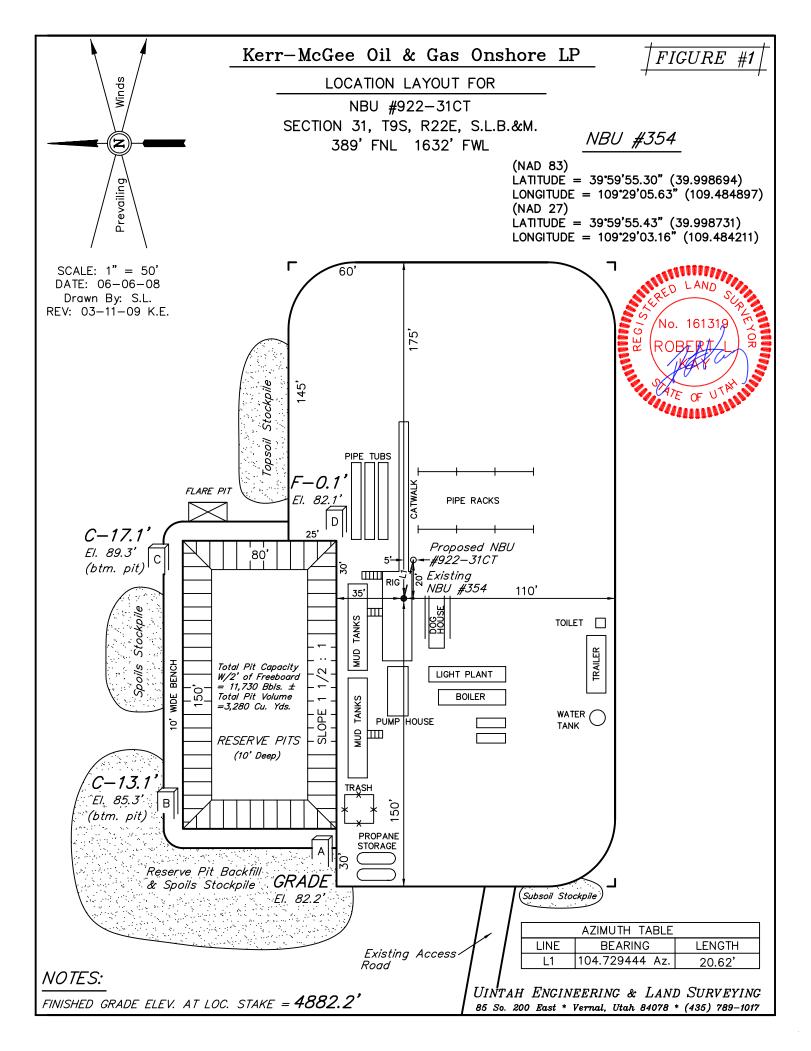
LOCATION PHOTOS

MONTH DAY YEAR

РНОТО

TAKEN BY: L.K. DRAWN BY: S.L. REV: Z.L. 03-11-09

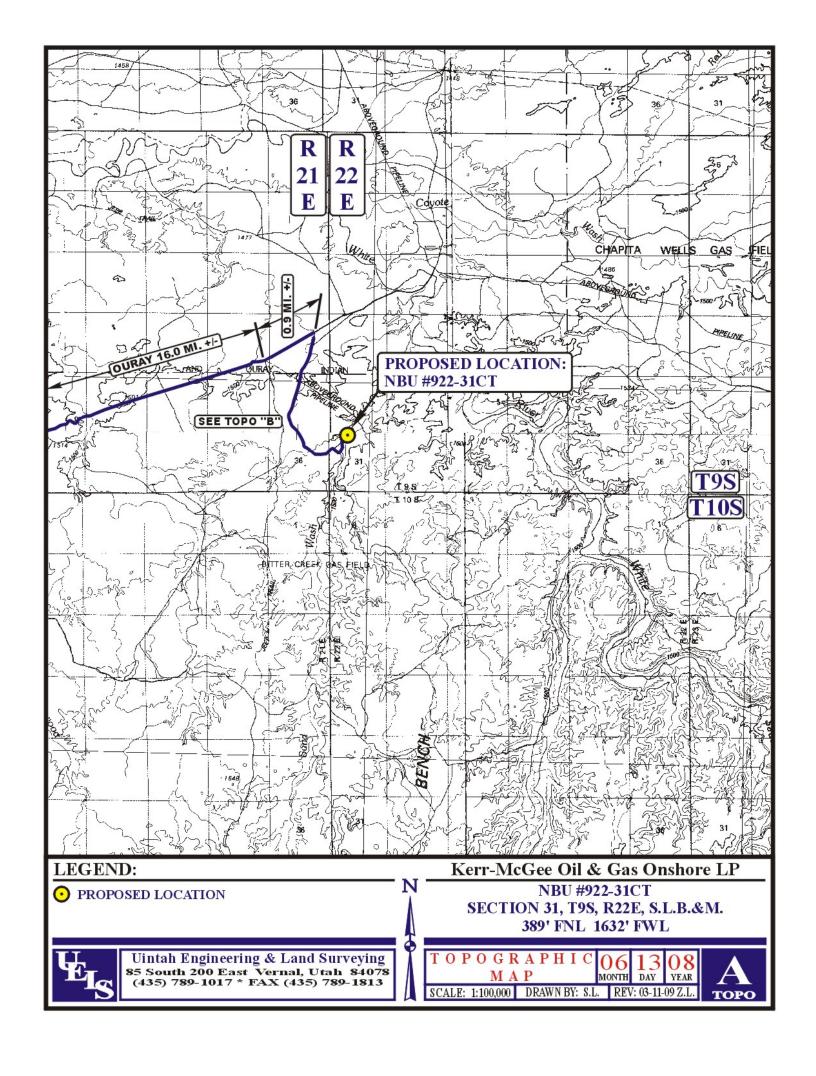


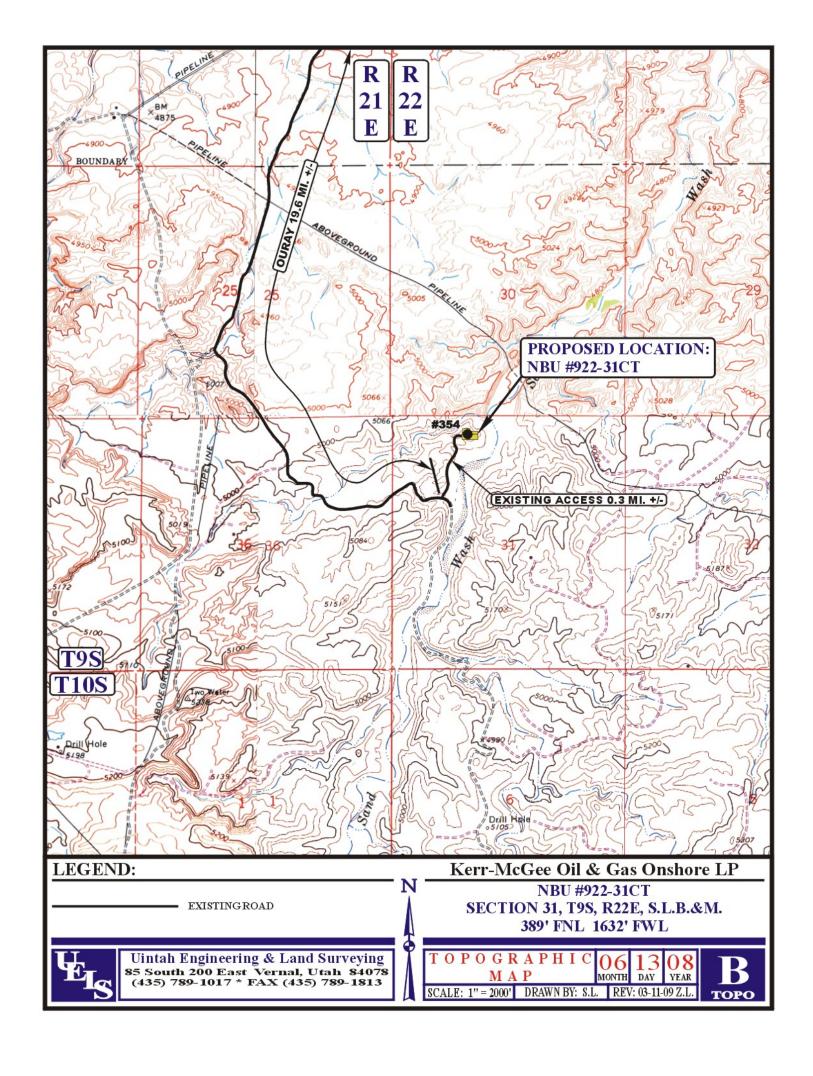


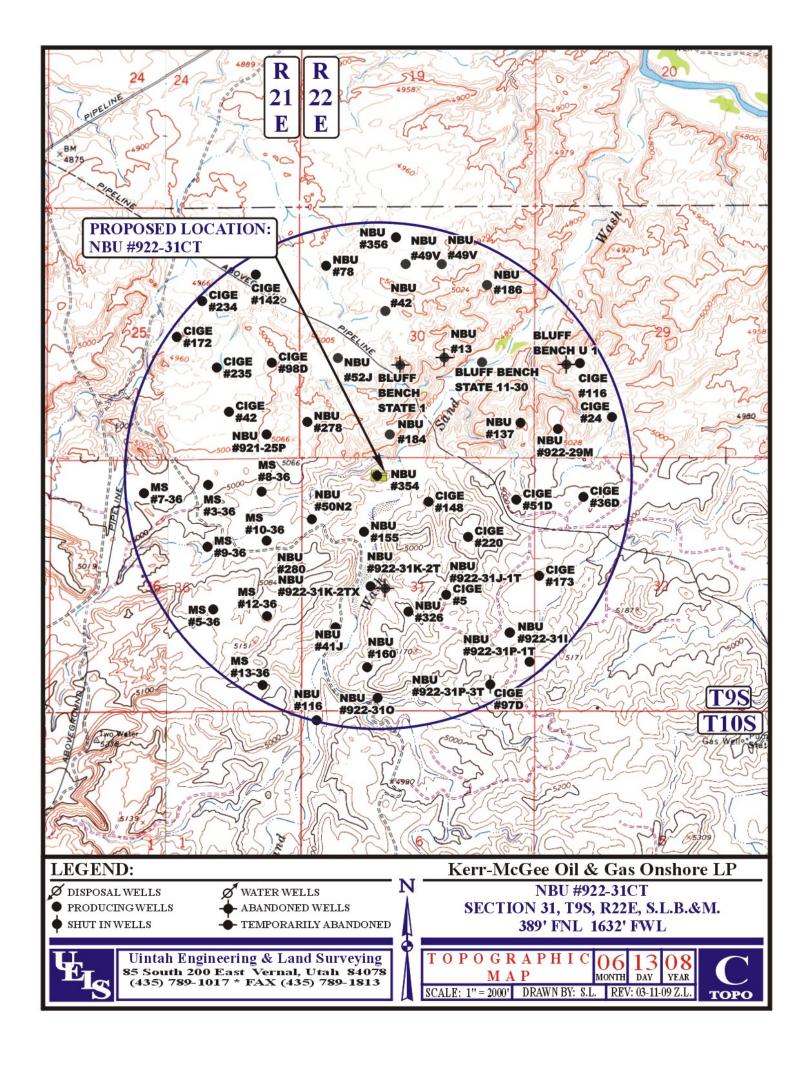
# Kerr-McGee Oil & Gas Onshore LP NBU #922-31CT SECTION 31, T9S, R22E, S.L.B.&M.

PROCEED IN A WESTERLY DIRECTION FROM VERNAL, UTAH ALONG U.S. HIGHWAY 40 APPROXIMATELY 14.0 MILES TO THE JUNCTION OF STATE HIGHWAY 88; EXIT LEFT AND PROCEED IN A SOUTHERLY DIRECTION APPROXIMATELY 17.0 MILES TO OURAY, UTAH; PROCEED IN A SOUTHERLY DIRECTION APPROXIMATELY 6.9 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE SOUTHEAST: TURN LEFT AND PROCEED IN A SOUTHEASTERLY, THEN EASTERLY DIRECTION APPROXIMATELY 5.0 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHWEST: TURN LEFT AND PROCEED IN A NORTHWESTERLY DIRECTION APPROXIMATELY 0.3 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHEAST; TURN RIGHT AND PROCEED IN A NORTHEASTERLY DIRECTION APPROXIMATELY 3.8 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHEAST: PROCEED IN A NORTHEASTERLY DIRECTION APPROXIMATELY 0.9 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE SOUTHWEST; TURN RIGHT AND PROCEED IN A SOUTHWESTERLY, THEN SOUTHEASTERLY DIRECTION APPROXIMATELY 2.7 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHEAST: TURN LEFT AND PROCEED IN A NORTHEASTERLY, THEN EASTERLY DIRECTION APPROXIMATELY 0.3 MILES NBU #354 AND THE PROPOSED LOCATION.

TOTAL DISTANCE FROM VERNAL, UTAH TO THE PROPOSED WELL LOCATION IS APPROXIMATELY 50.9 MILES.







STATE OF UTAH  DEPARTMENT OF NATURAL RESOURCES  DIVISION OF OIL, GAS, AND MINING			FORM 9	
			5.LEASE DESIGNATION AND SERIAL NUMBER: UTU-0464	
SUNDRY NOTICES AND REPORTS ON WELLS			6. IF INDIAN, ALLOTTEE OR TRIBE NAME:	
Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.			7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES	
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 922-31CT	
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONSHORE, L.P.			9. API NUMBER: 43047502260000	
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779  PHONE NUMBER: 720 929-6007 Ext			9. FIELD and POOL or WILDCAT: NATURAL BUTTES	
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0389 FNL 1632 FWL			COUNTY: UINTAH	
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NENW Section: 31 Township: 09.0S Range: 22.0E Meridian: S			STATE: UTAH	
CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA				
TYPE OF SUBMISSION	TYPE OF ACTION			
	ACIDIZE	ALTER CASING	CASING REPAIR	
NOTICE OF INTENT Approximate date work will start:	☐ CHANGE TO PREVIOUS PLANS	CHANGE TUBING	☐ CHANGE WELL NAME	
Approximate date work will start.	☐ CHANGE WELL STATUS	COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE	
SUBSEQUENT REPORT Date of Work Completion:	☐ DEEPEN	FRACTURE TREAT	☐ NEW CONSTRUCTION	
·	OPERATOR CHANGE	PLUG AND ABANDON	PLUG BACK	
✓ SPUD REPORT	PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION	
Date of Spud: 10/27/2009	REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	TEMPORARY ABANDON	
10/2//2009	TUBING REPAIR	☐ VENT OR FLARE	WATER DISPOSAL	
DRILLING REPORT Report Date:	□ WATER SHUTOFF	SI TA STATUS EXTENSION	APD EXTENSION	
Report Date:	WILDCAT WELL DETERMINATION	OTHER	OTHER:	
			'	
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.  MIRU PETE MARTIN BUCKET RIG. DRILLED 20" CONDUCTOR HOLE TO 40".  RAN 14" 36.7# SCHEDULE 10 PIPE. CMT W/28 SX READY MIX. SPUD WELLAccepted by the LOCATION ON 10/27/2009 AT 07:00 HRS.  Utah Division of Oil, Gas and Mining FOR RECORD ONLY  FOR RECORD ONLY				
NAME (PLEASE PRINT) Andy Lytle	<b>PHONE NUMBER</b> 720 929-6100	TITLE Regulatory Analyst		
SIGNATURE N/A		<b>DATE</b> 10/30/2009		
<u> </u>		7.7.7		

#### STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS AND MINING

ENT	 		
	 AI.	1 11 151	 

Operator:

KERR McGEE OIL & GAS ONSHORE LP

Operator Account Number: N 2995

Address:

P.O. Box 173779

city DENVER

state CO zip 80217 Phone Number: (720) 929-6100

#### Well 1

API Number	Well	Name	QQ	Sec	Twp	Rng	County	
4304750226	NBU 9	NENW	31	98	22E	UINTAH		
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date		
B	99999	2900	10	0/27/200	9	11	10/09	
	PETE MARTIN BUCK WELL LOCATION ON	ETRIG. WS7	MVD				<u> </u>	

#### Well 2

API Number	Well	QQ	Sec	Twp	vp Rng County				
4304740154	NBU 10	NESE	NESE 5 10S			UINTAH			
Action Code	Current Entity Number	New Entity Number	S	Spud Date			Entity Assignment Effective Date		
B	99999	99999 2900 10/27/2009			09	1/	110/09		
Comments: MIRU SPUD	PETE MARTIN BUCKI WELL LOCATION ON	ET RIG. MURC	) = WS 0 HRS.	mV.	Δ				

#### Well 3

API Number	Well	Name	QQ	Sec	Twp	Rng	County	
4304750386	4304750386 NBU 921-25L4BS				98	21E	UINTAH	
Action Code	Current Entity Number	New Entity Number	S	Spud Date		Entity Assignment Effective Date		
$\mathcal{B}$	99999	3900	10	0/27/20	09	1	1/10/09	
Comments:		115-11	11	·····	······································	<u> </u>		

MIRU PETE MARTIN BUCKET RIG. WS77WD SPUD WELL LOCATION ON 10/27/2009 AT 09:00 HRS.

BHL= NWSW

#### **ACTION CODES:**

- A Establish new entity for new well (single well only)
- B Add new well to existing entity (group or unit well)
- C Re-assign well from one existing entity to another existing entity
- D Re-assign well from one existing entity to a new entity

  Comments' section)

  RECEIVED

NOV 0 2 2009

ANDY LYTLE

Name (Please Print)

Signature REGULATORY ANALYST

10/30/2009

Title

Date

	STATE OF UTAH		FORM 9	
	5.LEASE DESIGNATION AND SERIAL NUMBER: UTU-0464			
SUND	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:			
Do not use this form for propo- bottom-hole depth, reenter plu DRILL form for such proposals.	7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES			
1. TYPE OF WELL Gas Well	8. WELL NAME and NUMBER: NBU 922-31CT			
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONS	HORE, L.P.		<b>9. API NUMBER:</b> 43047502260000	
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th S	treet, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6007 Ext	9. FIELD and POOL or WILDCAT: NATURAL BUTTES	
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0389 FNL 1632 FWL			COUNTY: UINTAH	
QTR/QTR, SECTION, TOWNSHI Qtr/Qtr: NENW Section: 31	P, RANGE, MERIDIAN: Township: 09.0S Range: 22.0E Meridian:	S	STATE: UTAH	
11. CHE	CK APPROPRIATE BOXES TO INDICA	TE NATURE OF NOTICE, REPORT,	OR OTHER DATA	
TYPE OF SUBMISSION		TYPE OF ACTION		
	☐ ACIDIZE	ALTER CASING	CASING REPAIR	
NOTICE OF INTENT Approximate date work will start:	CHANGE TO PREVIOUS PLANS	CHANGE TUBING	CHANGE WELL NAME	
	CHANGE WELL STATUS	COMMINGLE PRODUCING FORMATIONS	CONVERT WELL TYPE	
SUBSEQUENT REPORT Date of Work Completion:	DEEPEN	FRACTURE TREAT	NEW CONSTRUCTION	
	OPERATOR CHANGE	PLUG BACK		
SPUD REPORT	PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION	
Date of Spud:	REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	TEMPORARY ABANDON	
,	☐ TUBING REPAIR	☐ VENT OR FLARE	WATER DISPOSAL	
DRILLING REPORT Report Date:	☐ WATER SHUTOFF	SI TA STATUS EXTENSION	APD EXTENSION	
12/2/2009	☐ WILDCAT WELL DETERMINATION	OTHER	OTHER:	
MIRU PROPETRO AIR TO 2280'. RAN 9-5/8 G PREM LITE @ 11.0 LITE @ 15.8 PPG, 1. SX CLASS G PREM L	MPLETED OPERATIONS. Clearly show all per RIG ON 11/30/2009. DRILLE B" 36# J-55 SURFACE CSG. LE PPG, 3.82 YIELD. TAILED CM 15 YIELD. BUMP PLUG, FLOAT ITE @ 15.8 PPG, 1.15 YIELD. . PUMP TOP OUT #3 W/100 S	ED 12-1/4" SURFACE HOLE EAD CMT W/210 SX CLASS T W/200 SX CLASS G PRENCES TS HELD. TOP OUT W/12511 PUMP TOP OUT #2 NEW FOR	Accepted by the Itah Division of	
NAME (PLEASE PRINT) Andy Lytle	<b>PHONE NUMBER</b> 720 929-6100	TITLE Regulatory Analyst		
SIGNATURE N/A		<b>DATE</b> 12/3/2009		

	STATE OF UTAH DEPARTMENT OF NATURAL RESOURCE	rec	FORM 9							
	<b>5.LEASE DESIGNATION AND SERIAL NUMBER:</b> UTU-0464									
SUNDF	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:									
	sals to drill new wells, significantly deeper igged wells, or to drill horizontal laterals. I		7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES							
1. TYPE OF WELL Gas Well	8. WELL NAME and NUMBER: NBU 922-31CT									
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONS		9. API NUMBER: 43047502260000								
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th S	treet, Suite 600, Denver, CO, 80217 3779	PHONE NUMBER: 720 929-6007 Ext	9. FIELD and POOL or WILDCAT: NATURAL BUTTES							
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0389 FNL 1632 FWL			COUNTY: UINTAH							
QTR/QTR, SECTION, TOWNSHI Qtr/Qtr: NENW Section: 31	s	STATE: UTAH								
11. CHE	CK APPROPRIATE BOXES TO INDICA	TE NATURE OF NOTICE, REPORT,	OR OTHER DATA							
TYPE OF SUBMISSION		TYPE OF ACTION								
	ACIDIZE	ALTER CASING	CASING REPAIR							
NOTICE OF INTENT Approximate date work will start:	CHANGE TO PREVIOUS PLANS	CHANGE TUBING	CHANGE WELL NAME							
SUBSEQUENT REPORT	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE							
Date of Work Completion:	☐ DEEPEN ☐ OPERATOR CHANGE	☐ FRACTURE TREAT ☐ PLUG AND ABANDON	☐ NEW CONSTRUCTION ☐ PLUG BACK							
	PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION							
SPUD REPORT Date of Spud:	REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	TEMPORARY ABANDON							
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL							
✓ DRILLING REPORT Report Date:	☐ WATER SHUTOFF	SI TA STATUS EXTENSION	APD EXTENSION							
1/3/2010	☐ WILDCAT WELL DETERMINATION	OTHER	OTHER:							
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.  FINISHED DRILLING FROM 2280'TO 9335' ON 01/01/2010. RAN 4-1/2"  11.6# I-80 PRODUCTION CASING. PUMP 40 BBLS WATER SPACER. LEAD CMACCEPted by the W/475 SX CLASS G PREM LITE @ 11.7 PPG, 2.49 YIELD. TAILED CMT W/1270tah Division of SX CLASS G 50/50 POZ MIX @ 14.3 PPG, 1.31 YIELD. DROP PLUG & Oil, Gas and Mining DISPLACE W/145 BBLS CLAYTREAT WATER, BUMP PLUG W/ 3200 PSI, FOR RECORD ONLY LIFT PSI OF 2300, FULL RETURNS THOUGHOUT JOB, 15 BBLS CEMENT TO PITS, 1 BACK TO TRUCK, FLUSH OUT STACK & LAND CASING W/ 65K, R/D.  RELEASE PIONEER 69 RIG ON 01/03/2010 AT 12:00 HRS.										
NAME (PLEASE PRINT) Andy Lytle	<b>PHONE NUMBER</b> 720 929-6100	TITLE Regulatory Analyst								
SIGNATURE N/A		DATE 1/5/2010								

	STATE OF UTAH DEPARTMENT OF NATURAL RESOURG	CES	FORM 9
	5.LEASE DESIGNATION AND SERIAL NUMBER: UTU-0464		
SUND	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:		
Do not use this form for propo- bottom-hole depth, reenter plu DRILL form for such proposals	7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES		
1. TYPE OF WELL Gas Well	8. WELL NAME and NUMBER: NBU 922-31CT		
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONS	9. API NUMBER: 43047502260000		
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th S	treet, Suite 600, Denver, CO, 80217 377	<b>PHONE NUMBER:</b> 9 720 929-6007 Ext	9. FIELD and POOL or WILDCAT: NATURAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0389 FNL 1632 FWL	TO DANCE MEDICINA		COUNTY: UINTAH
QTR/QTR, SECTION, TOWNSHI Qtr/Qtr: NENW Section: 31	: S	STATE: UTAH	
11. CHE	CK APPROPRIATE BOXES TO INDICA	ATE NATURE OF NOTICE, REPORT,	OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
	☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
NOTICE OF INTENT Approximate date work will start:	CHANGE TO PREVIOUS PLANS	CHANGE TUBING	CHANGE WELL NAME
SUBSEQUENT REPORT	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS ☐ FRACTURE TREAT	☐ CONVERT WELL TYPE ☐ NEW CONSTRUCTION
Date of Work Completion:	OPERATOR CHANGE	PLUG AND ABANDON	PLUG BACK
	✓ PRODUCTION START OR RESUME	PRODUCTION START OR RESUME RECLAMATION OF WELL SITE	
SPUD REPORT Date of Spud:	REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	TEMPORARY ABANDON
	☐ TUBING REPAIR	VENT OR FLARE	WATER DISPOSAL
✓ DRILLING REPORT Report Date:	☐ WATER SHUTOFF	SI TA STATUS EXTENSION	APD EXTENSION
1/29/2010	☐ WILDCAT WELL DETERMINATION	OTHER	OTHER:
The subject well was	MPLETED OPERATIONS. Clearly show all possible placed on production on 1/2 history will be submitted wit	29/2010 at 11:30 A.M. The th the completion report. • Oi	
NAME (PLEASE PRINT) Andy Lytle	<b>PHONE NUMBE</b> 720 929-6100	R TITLE Regulatory Analyst	
SIGNATURE N/A		<b>DATE</b> 2/1/2010	

Form 3160-4 (August 2007)

#### **UNITED STATES** DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

FORM APPROVED OMB No. 1004-0137 Expires: July 31, 2010

	WELL (	COMPL	ETION C	R RE	COM	PLETIC	ON RE	POR	L AND F	_OG			ease Serial I JTU464	No.		
1a. Type of	f Well	Oil Well	☑ Gas <sup>1</sup>	Well	☐ Dry	/ <b>0</b> 0	Other					6. If	Indian, All	ottee or	Tribe Name	
b. Type of	f Completion	Othe		□ Wo	rk Over	<b>D</b> D	eepen	☐ Plu	ig Back	☐ Diff.	Resvr.		nit or CA A		ent Name and	No.
2. Name of KERR-	Operator MCGEE OII	L&GAS C	NSHOREE	LMail: a		ontact: A						8. L	ease Name	and We	ell No.	
	P.O. BOX DENVER	173779	i i			,	3a.	Phone N	No. (include 29-6100	e area cod	le)		PI Well No		43-047-502	26
4. Location	of Well (Re			d in acc	ordance	with Fed	eral req	uirement	ts)*		·				Exploratory	
At surfa	ice NENW	/ 389FNL	1632FWL	39.998	72 N La	it, 109.48	3414 W	Lon				11. 5	Sec., T., R.,	M., or	Block and Su	rvey
At top p	orod interval i	reported b	elow NEN	IW 389	FNL 16	32FWL	39.9987	72 N Lat	, 109.484	14 W Loi	1		r Area Secounty or P		9S R22E Me	r SLB
At total		NW 389F	FN4634 NL 1632FV				.48414					L	JINTÁH		UT	
14. Date St 10/27/2				ate T.D. /01/201	Reache 0	d		□ D 8	te Complet & A 🔀 29/2010	ed Ready to	Prod.	17. ]		DF, KE 32 GL	3, RT, GL)*	
18. Total D	Depth:	MD TVD	9335 9331		19. Ph	ug Back 7	Γ.D.:	MD TVD		286 282	20. De	pth Bri	dge Plug Se		MD TVD	
21. Type E	lectric & Oth	er Mecha	nical Logs R	un (Sub	mit copy	of each)					s well core s DST run	?	<b>⋈</b> No	Yes	(Submit anal	ysis) ysis)
23. Casing a	nd Liner Rec	ord (Reno	ort all strings	set in v	vell)					Dir	ectional Su	irvey?	No 24	Yes	(Submit anal	ysis)
Hole Size	Size/G		Wt. (#/ft.)	То	р	Bottom	1 ~	Cemente		of Sks. &	Slurry		Cement 7	Гор*	Amount P	ulled
20.000	14.000	STEEL	36.7	(MI	<del>"</del>	(MD)	<del></del>	Depth	Type	of Cemen	: (BI 28	SL)				
12.000		625 J-55	36.0			2269					35	· · · · ·				1
7.875	4.	500 I-80	11.6			9330	)			17	51			0		
· · · · · · · · · · · · · · · · · · ·		·					ļ									
	<b>-</b>					<del></del>		· · · · · ·								
24. Tubing	Record		<u> </u>	l	<u>ļ</u>		.l									·
Size	Depth Set (M	(ID) P	acker Depth	(MD)	Size	Dep	th Set (N	MD)	Packer De	pth (MD)	Size	De	epth Set (M)	D)	Packer Depth	(MD)
2.375		8713														
	ng Intervals	· · · · · · · · · · · · · · · · · · ·		- 1				ation Rec							······································	
A)	ormation MESAVE	PDE	Тор	7118	Botto	m 9259	P	erforated	d Interval	0.0250	Size		No. Holes	ODE	Perf. Status	
B)	MESAVE	INDE		7110		3209			/1101	O 9259	0.0	360	312	OPE	<u> </u>	
C)				<u> </u>	.,									l		
D)																
<del></del>	racture, Treat		nent Squeeze	, Etc.						·····						
	Depth Interva		259 PMP 10	033 BB	1 6 61 10	K HOU 8 4	207 220		Amount and	d Type of	Material					
· · · · · · · · · · · · · · · · · · ·	/1	16 10 9.	259 FWF 10	,033 66	LO SLIC	N ΠΖυ α .	007,220	LBS 30/5	50 SD.							
28 Product	ion - Interval	Δ		·												
Date First	Test	Hours	Test	Oil	Gas	. 1	Water	Oil	Gravity	Gas		Product	ion Method		•	
Produced 01/29/2010	Date 02/01/2010	Tested 24	Production	BBL <b>200</b> .	МС	721.0	BBL 400.0	Corr	. API	Grav	rity			VC	NA 14/1-1 1	
Choke	Tbg. Press.	Csg.	24 Hr.	Oil	Gas		Water	Gas:	Oil	Wel	Status	l	FLOV	VS FRC	OM WELL	
Size 20/64	Flwg. 2040 SI		Rate	BBL 200	MC		BBL 400	Rati			PGW					
	tion - Interva		<u> </u>			1		<del></del> .		L						
Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MC		Water BBL		Gravity	Gas		Product	ion Method			
		10000		טטט	IVIC	*	بدورم	Con	. API	Grav	ııy			RF	CEIVE	בח
Choke Size	Tbg. Press. Flwg.	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MC		Water BBL	Gas: Ratio		Well	Status	-				
	SI	I		I	I	i		- 1						W.A	AR NR 20	111

28h Prod	luction - Inter	rvol C							<u></u>	· · · · · · · · · · · · · · · · · · ·		
Date First	Test	Hours	Test	Oil	Gas	Water	Oil Gravity	Gas	<del></del>	Production Method		
Produced	Date	Tested	Production	BBL	MCF	BBL	Corr. API	Grav	ity	Production Method		
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well	Status	-		
28c. Prod	luction - Inter	val D	<del> </del>	<del></del>	<del>. I</del>	<b></b>						
Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Grav	ity	Production Method		
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well	Status			
29. Dispo	osition of Gas	(Sold, used	d for fuel, ven	ted, etc.)					· · · · · · · · · · · · · · · · · · ·			
		s Zones (I	nclude Aquife	ers):					31. Fo	rmation (Log) Mark	ers	<del></del>
tests,							l all drill-stem 1 shut-in pressure	es				
	Formation		Тор	Bottom		Description	ons, Contents, etc	c.		Name		Top Meas. Depth
GREEN F MAHOGA WASATO MESAVE	ANY :H		1214 1936 4502 7104	7092 9343								
							·					
ATTA	tional remarks ACHED TO ORT.	s (include THIS WE	plugging proc LL COMPLE	edure): TION REP	ORT IS T	THE CHRON	OLOGICAL WE	ELL HISTO	ORY ANI	D END OF WELL		,
1. El		anical Log	gs (1 full set rong and cement			Geologic     Core An	-		. DST Re	port	4. Direction	al Survey
34. I here	by certify the	t the foreg	Elec	tronic Subn	nission #8	2111 Verified	rrect as determing the by the BLM WONSHORE, LP,	ell Inforn	nation Sy	e records (see attach stem.	ed instructio	ns):
Name	e (please prini	) ANDY L	YTLE		·		Title <u>F</u>	REGULAT	ORY AN	IALYST		
Signa	ature	(Electro	nje Submiss	ion)	· · · · · · · · · · · · · · · · · · ·		Date <u>C</u>	03/01/201	0			
Title 18 I	J.S.C. Section	1 1001 and	Title 43 II S	C. Section	212. mak	e it a crime fo	r any person kno	wingly and	i willfulls	to make to any dep	artment or a	zency
of the Un	ited States an	y false, fic	titious or frac	ulent staten	ents or re	presentations	as to any matter v	within its j	urisdictio	n.	un carrotte Ot a	201107



# **END OF WELL REPORT**

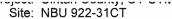
# **Prepared For:**

# Kerr McGee Oil & Gas Onshore LP NBU 922-31CT NBU 922-31CT Pad Pioneer 69 Uintah County, UT

Prepared By:

Rex Hall, Grand Junction D.E.
Scientific Drilling
Rocky Mountain Region

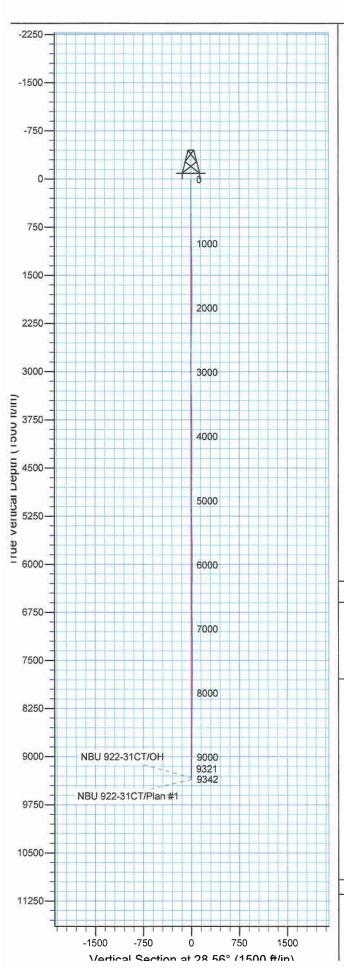
Scientific Drilling International 7237 W. Barton Rd., Casper, WY 82604 P.O. Box 1600, Mills, WY 82644 (307) 472-6621 rex.hall@scientificdrilling.com

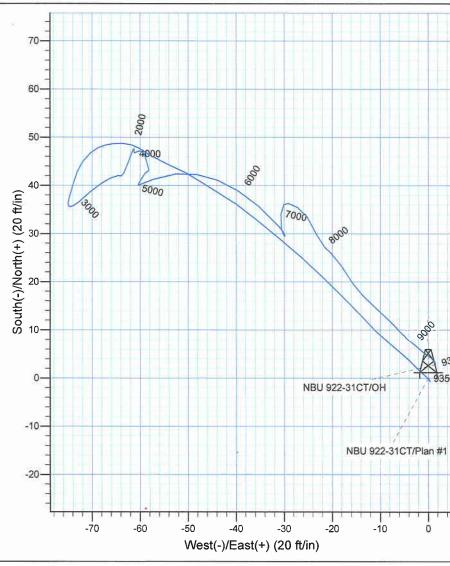


Scientific Drilling Rocky Mountain Operations Well: NBU 922-31CT

Wellbore: OH Design: OH

#### Kerr McGee Oil and Gas Onshore LP





#### WELL DETAILS: NBU 922-31CT

Ground Level: GL 4882' & RKB 18' @ 4900,00ft (Pioneer 69) +E/-W +N/-S Northing Easting Latitude Longitude 0.00 0.00 14529187.37 2064962.82 39° 59' 55.380 N 109° 29' 2,900 W

#### REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well NBU 922-31CT, True North Vertical (TVD) Reference: GL 4882' & RKB 18' @ 4900.00ft (Pioneer 69) Section (VS) Reference: Slot - (0.00N, 0.00E) Measured Depth Reference: GL 4882' & RKB 18' @ 4900.00ft (Pioneer 69)

Calculation Method: Minimum Curvature Local North: True

Location: Sec 31 T10S R22E

PROJECT DETAILS: Uintah County, UT UTM12

Geodetic System: Universal Transverse Mercator (US Survey Feet Datum: NAD 1927 - Westem US Ellipsoid: Clarke 1866 Zone: Zone 12N (114 W to 108 W)

Design: OH (NBU 922-31CT/OH)

Created By: Rex Hall Date: 2010-01-20



# **Kerr McGee Oil and Gas Onshore LP**

Uintah County, UT UTM12 NBU 922-31CT NBU 922-31CT OH

Design: OH

# **Standard Survey Report**

20 January, 2010





Survey Report



Company:

Kerr McGee Oil and Gas Onshore LP

Project:

Uintah County, UT UTM12

Site:

NBU 922-31CT

Well:

NBU 922-31CT

Wellbore: Design:

ОН ОН Local Co-ordinate Reference:

**TVD Reference:** 

Well NBU 922-31CT

GL 4882' & RKB 18' @ 4900.00ft (Pioneer 69) GL 4882' & RKB 18' @ 4900.00ft (Pioneer 69)

MD Reference:

North Reference: **Survey Calculation Method:** 

Database:

Minimum Curvature

True

EDM 2003.16 Multi-User Db

**Project** 

Uintah County, UT UTM12

Map System:

Universal Transverse Mercator (US Survey Feet)

System Datum:

Mean Sea Level

Geo Datum:

NAD 1927 - Western US

Map Zone:

Zone 12N (114 W to 108 W)

Site

From:

NBU 922-31CT, Sec 31 T10S R22E

Site Position:

Lat/Long

Northing:

14,529,187.37 ft

Latitude:

39° 59' 55.380 N

**Position Uncertainty:** 

Easting: Slot Radius: 2,064,962.82 ft

Longitude:

0.00 ft

Easting:

**Grid Convergence:** 

109° 29' 2.900 W

0.97°

Well

NBU 922-31CT, 389' FNL & 1632' FWL

**Well Position** 

+N/-S +E/-W 0.00 ft

Northing:

14,529,187.37 ft 2,064,962.82 ft Latitude: Longitude: 39° 59' 55.380 N

**Position Uncertainty** 

0.00 ft 0.00 ft

Wellhead Elevation:

ft

**Ground Level:** 

109° 29' 2.900 W 4,882.00 ft

Wellbore

ОН

OH

Magnetics

**Model Name** 

Sample Date

Declination (°)

Dip Angle (°)

**Field Strength** 

(nT)

IGRF2005-10

11/30/2009

11.25

65.92

52,515

Design

Audit Notes:

Version:

1.0

Phase:

**ACTUAL** 

Tie On Depth:

14.00

28.56

Vertical Section:

Depth From (TVD) (ft)

14.00

+N/-S (ft) 0.00

+E/-W (ft) 0.00

Direction (°)

Survey Program

Date 1/20/2010

From

To

Survey (Wellbore)

**Tool Name** 

Description

162.00 2,302.00 2,232.00 Survey #1 - Surface (OH) 9,335.00 Survey #2 - Production (OH)

MWD SDI MWD SDI

MWD - Standard ver 1.0.1 MWD - Standard ver 1,0,1

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
14.00	0.00	0.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00
162.00	0.39	155.19	162.00	-0.46	0.21	-0.30	0.26	0.26	0.00
252.00	0.11	73.58	252.00	-0.71	0.42	-0.42	0.43	-0.31	-90.68
342.00	0.95	315.56	341.99	-0.15	-0.02	-0.14	1.12	0.93	-131.13
432.00	2.09	312.42	431.96	1.49	-1.75	0.47	1.27	1.27	-3.49
522.00	2.55	315.56	521.89	4.02	-4.36	1.45	0.53	0.51	3.49
612.00	2.69	306.09	611.79	6.70	-7.47	2.31	0.50	0.16	-10.52
702.00	3.02	315.83	701.68	9.64	-10.83	3.29	0.65	0.37	10.82
792.00	3.12	316.75	791.55	13.13	-14.16	4.76	0.12	0.11	1.02
882.00	3.66	314.50	881.40	16.92	-17.89	6.31	0.62	0.60	-2.50
972.00	3.77	313.98	971.21	20.99	-22.07	7.89	0.13	0.12	-0.58
1,062.00	3.77	312.42	1,061.01	25.04	-26.38	9.38	0.11	0.00	-1 73



Survey Report



Company: Kerr McGee Oil and Gas Onshore LP

Project: Uintah County, UT UTM12

NBU 922-31CT Site: NBU 922-31CT Well:

ОН Wellbore: OH Design:

Local Co-ordinate Reference:

Well NBU 922-31CT **TVD Reference:** 

GL 4882' & RKB 18' @ 4900.00ft (Pioneer 69) MD Reference: GL 4882' & RKB 18' @ 4900.00ft (Pioneer 69)

North Reference:

Minimum Curvature **Survey Calculation Method:** 

Database: EDM 2003.16 Multi-User Db

C	E	rv	۵	٧,	

Survey									
Measured			Vertical			Vertical	Dogleg	Build	Turn
Depth	Inclination	Azimuth	Depth	+N/-S	+E/-W	Section	Rate	Rate	Rate
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)
1,152.00	111	308.43	1,150.80	29.04	-31.09	10.65		0.20	4.49
1,132.00	4.11 3.70	309.90	1,240.59	32.91	-31.09 -35.84	11.77	0.49 0.47	0.38	-4.43
1,332.00	2.91	304.28	1,330.44	36.06	-39.96	12.57		-0.46	1.63
1,332.00	2.91	304.20	1,330.44	36.06	-39.90	12.57	0.95	-0.88	-6.24
1,422.00	3.00	300.55	1,420.32	38.54	-43.88	12.88	0.24	0.10	-4.14
1,512.00	2.36	303.49	1,510.22	40.76	-47.45	13.12	0.73	-0.71	3.27
1,602.00	2.32	299.12	1,600.15	42.67	-50.59	13.30	0.20	-0.04	-4.86
1,692.00	2.36	289.92	1,690.07	44.19	-53.92	13.04	0.42	0.04	-10.22
1,812.00	2.08	304.95	1,809.98	46.28	-58.03	12.91	0.54	-0.23	12.52
1,902.00	1.29	300.08	1,899.94	47.72	-60.24	13.12	0.89	-0.88	-5.41
1,992.00	1.04	284.05	1,989.92	48.43	-61.91	12.94	0.45	-0.28	-17.81
2,082.00	1.18	274.87	2,079.91	48.70	-63.63	12.36	0.25	0.16	-10.20
2,172.00	1.43	262.72	2,169.88	48.64	-65.67	11.33	0.41	0.28	-13.50
2,232.00	1.31	257.53	2,229.87	48.40	-67.08	10.44	0.29	-0.20	-8.65
2,302.00	1.32	244.68	2,299.85	47.88	-68.59	9.27	0.42	0.01	10 26
2,392.00	1.41	228.24	2,389.82	46.70	-70.35	7.39	0.42	0.10	-18.36 -18.27
2,494.00	1.41	213.56	2,491.79	44.82	-70.33 -71.98	4.96	0.44	0.00	-14.39
2,583.00	1.58	204.51	2,580.76	42.79	-73.10	2.64	0.33	0.19	-10.17
2,678.00	1.76	194.58	2,675.72	40.19	-74.01	-0.08	0.36	0.19	-10.45
i i									
2,777.00	1.93	196.43	2,774.67	37.12	-74.86	-3.19	0.18	0.17	1.87
2,873.00	0.88	89.55	2,870.65	35.57	-74.58	-4.41	2.44	-1.09	-111.33
2,968.00	2.02	47.89	2,965.62	36.70	-72.61	-2.48	1.56	1.20	-43.85
3,057.00	1.76	49.03	3,054.57	38.65	-70.41	0.29	0.30	-0.29	1.28
3,158.00	1.67	57.91	3,155.53	40.45	-67.99	3.02	0.28	-0.09	8.79
3,248.00	1.14	63.71	3,245.50	41.54	-66.08	4.90	0.61	-0.59	6.44
3,346.00	0.70	84.45	3,343.49	42.03	-64.61	6.03	0.56	-0.45	21.16
3,434.00	0.26	134.29	3,431.49	41.94	-63.93	6.28	0.65	-0.50	56.64
3,538.00	0.88	25.39	3,535.48	42.50	-63.42	7.01	0.96	0.60	-104.71
3,626.00	1.58	20.82	3,623.46	44.24	-62.70	8.89	0.80	0.80	-5.19
3,723.00	0.97	20.47	3,720.44	46.26	-61.94	11.02	0.63	-0.63	-0.36
3,817.00	0.44	25.74	3,814.43	47.33	-61.50	12.17	0.63	-0.56	5.61
3,916.00	0.09	155.47	3,913.43	47.60	-61.31	12.51	0.51	-0.35	131.04
4,005.00	0.62	181.31	4,002.43	47.06	-61.29	12.04	0.61	0.60	29.03
4,106.00	0.53	49.82	4,103.42	46.81	-60.94	11.99	1.04	-0.09	-130.19
	2.44	20.40							
4,201.00 4,292.00	0.44	82.43	4,198.42 4,289.42	47.15	-60.25	12.61	0.30	-0.09	34.33
1	0.44	118.82	,	47.02	-59.59	12.81	0.30	0.00	39.99
4,385.00 4,490.00	0.53	158.98 165.58	4,382.41	46.45	-59.13	12.53	0.37	0.10	43.18
4,581.00	0.88 1.06	163.55	4,487.41 4,578.39	45.21 43.73	-58.75	11.63	0.34	0.33	6.29
,			4,576.39		-58.34	10.52	0.20	0.20	-2.23
4,671.00	0.35	262.26	4,668.39	42.90	-58.38	9.77	1.30	-0.79	109.68
4,765.00	0.44	225.52	4,762.39	42.60	-58.92	9.26	0.28	0.10	-39.09
4,958.00	0.97	206.53	4,955.37	40.62	-60.18	6.91	0.30	0.27	-9.84
5,046.00	0.26	65.56	5,043.37	40.04	-60.33	6.33	1.34	-0.81	-160.19
5,239.00	1.67	68.81	5,236.33	41.24	-57.31	8.83	0.73	0.73	1.68
5,426.00	1.32	85.68	5,423.27	42.38	-52.62	12.07	0.30	-0.19	9.02
5,616.00	1.32	97.02	5,613.22	42.28	-48.26	14.07	0.14	0.00	5.97
5,806.00	1.41	113.28	5,803.17	41.09	-43.94	15.08	0.21	0.05	8.56
5,998.00	1.49	121.45	5,995.11	38.85	-39.64	15.18	0.12	0.04	4.26
6,182.00	1.76	130.33	6,179.03	35.78	-35.45	14.48	0.20	0.15	4.83
6,381.00	1.85	138.77	6,377.93	31.38	-31.00	12.74	0.14	0.05	4.24
6,470.00	0.70	163.47	6,466.91	29.78	-29.90	11.86	1.40	-1.29	4.24 27.75
6,566.00	0.26	329.40	6,562.91	29.41	-29.85	11.56	0.99	-0.46	172.84
6,660.00	0.35	313,50	6,656.91	29.79	-30.16	11.75	0.99	-0.46 0.10	-16.91
6,756.00	1.06	349.18	6,752.90	30.86	-30.54	12.51	0.13	0.74	37.17
6,946.00	0.88	6.76	6,942.87	34.04	-30.70	15.22	0.18	-0.09	9.25



Survey Report



Company: Project:

Kerr McGee Oil and Gas Onshore LP

Site:

Uintah County, UT UTM12 NBU 922-31CT

Well:

NBU 922-31CT

ОН

ОН

Wellbore: Design:

Local Co-ordinate Reference:

**TVD Reference:** 

Well NBU 922-31CT GL 4882' & RKB 18' @ 4900.00ft (Pioneer 69)

MD Reference:

GL 4882' & RKB 18' @ 4900.00ft (Pioneer 69)

North Reference:

**Survey Calculation Method:** 

Minimum Curvature

True

Database:

EDM 2003.16 Multi-User Db

rvev

Measured			Vertical			Vertical	Dogleg	Build	Turn
Depth (ft)	Inclination (°)	Azimuth (°)	Depth (ft)	+N/-S (ft)	+E/-W (ft)	Section (ft)	Rate (°/100ft)	Rate (°/100ft)	Rate (°/100ft)
7,137.00	0.44	36.46	7,133.86	36.08	-30.09	17.31	0.28	-0.23	15.55
7,314.00	0.44	123.83	7,310.86	36.25	-29.12	17.92	0.34	0.00	49.36
7,514.00	0.70	106.43	7,510.85	35.48	-27.31	18.11	0.15	0.13	-8.70
7,702.00	1.14	149.58	7,698.83	33.54	-25.26	17.38	0.42	0.23	22.95
7,896.00	1.41	153.71	7,892.78	29.74	-23.23	15.01	0.15	0.14	2.13
8,056.00	0.88	134.81	8,052.75	27.11	-21.49	13.54	0.40	-0.33	-11.81
8,146.00	1.06	130.51	8,142.73	26.08	-20.36	13.17	0.22	0.20	-4.78
8,341.00	1.06	150.90	8,337.70	23.33	-18.12	11.83	0.19	0.00	10.46
8,525.00	1.67	144.57	8,521.65	19.66	-15.73	9.75	0.34	0.33	-3.44
8,717.00	2.81	131.83	8,713.50	14.24	-10.60	7.44	0.64	0.59	-6.64
8,906.00	1.58	139.82	8,902.36	9.16	-5.47	5.43	0.67	-0.65	4.23
9,102.00	1.85	122.86	9,098.27	5.38	-1.07	4.21	0.29	0.14	-8.65
9,269.00	0.44	162.76	9,265.23	3.30	1.38	3.56	0.92	-0.84	23.89
9,335.00	0.44	162.76	9,331.23	2.82	1.53	3.21	0.00	0.00	0.00

Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
NBU 922-31CT Rectang - actual wellpath mi - Rectangle (sides \	, sses target cer		9,356.00 ft at 9335.00	-25.00 Off MD (9331.23	25.00 TVD, 2.82 N	14,529,162.80 I, 1.53 E)	2,064,988.24	39° 59' 55.133 <b>N</b>	109° 29' 2.579 W
NBU 922-31CT PBHL - actual wellpath mi		0.00 nter by 24.98	9,356.00 ft at 9335.00	0.00 Oft MD (9331.23	0.00 TVD, 2.82 N	14,529,187.37 I, 1.53 E)	2,064,962.82	39° 59' 55.380 N	109° 29' 2.900 W

Design Annotations				
Measured Depth	Vertical Depth		Coordinates	
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	Comment
162.00	162.00	-0.46	0.21	First SDI Surface MWD Survey
2,232.00	2,229.87	48.40	-67.08	Last SDI Surface MWD Survey
2,302.00	2,299.85	47.88	-68.59	First SDI Production MWD Survey
9,269.00	9,265.23	3.30	1.38	Last SDI Produtction MWD Survey
9,335.00	9,331.23	2.82	1.53	Projection To TD

Approved by.	Checked By:		Date:
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# **Kerr McGee Oil and Gas Onshore LP**

Uintah County, UT UTM12 NBU 922-31CT NBU 922-31CT OH

Design: OH

# **Survey Report - Geographic**

20 January, 2010





Survey Report - Geographic



Company: Project:

Kerr McGee Oil and Gas Onshore LP

Uintah County, UT UTM12

Site: Well: NBU 922-31CT

NBU 922-31CT

Wellbore: Design:

OH ОН Local Co-ordinate Reference:

**TVD Reference:** 

Well NBU 922-31CT

GL 4882' & RKB 18' @ 4900.00ft (Pioneer 69)

MD Reference: North Reference:

**Survey Calculation Method:** 

Database:

Minimum Curvature

EDM 2003.16 Multi-User Db

GL 4882' & RKB 18' @ 4900.00ft (Pioneer 69)

**Project** 

Uintah County, UT UTM12

Map System:

Universal Transverse Mercator (US Survey Feet)

Geo Datum:

NAD 1927 - Western US

System Datum:

Mean Sea Level

Map Zone:

Zone 12N (114 W to 108 W)

Site

Well

NBU 922-31CT, Sec 31 T10S R22E

Site Position:

Lat/Long

Northing:

14,529,187.37 ft

Latitude:

39° 59' 55.380 N

**Position Uncertainty:** 

Easting:

2,064,962.82 ft

Longitude:

Slot Radius:

**Grid Convergence:** 

109° 29' 2.900 W 0.97°

0.00 ft NBU 922-31CT, 389' FNL & 1632' FWL

**Well Position** 

+N/-S

0.00 ft

Northing:

14,529,187.37 ft 2,064,962.82 ft

Latitude: Longitude: 39° 59' 55.380 N

**Position Uncertainty** 

+E/-W 0.00 ft 0.00 ft

Easting: Wellhead Elevation:

ft

**Ground Level:** 

109° 29' 2.900 W 4,882.00 ft

Wellbore

OH

**Magnetics** 

**Model Name** 

Sample Date

Declination (°)

**Dip Angle** (°)

Field Strength

(nT)

IGRF2005-10

11/30/2009

11.25

65.92

52,515

Design

**Audit Notes:** 

Version:

1.0

ОН

Phase:

**ACTUAL** 

Tie On Depth:

14.00

**Vertical Section:** 

Depth From (TVD) (ft)

14.00

+N/-S (ft)

0.00

+E/-W (ft) 0.00

Direction (°)

28.56

Survey Program

1/20/2010 Date

2,232.00 Survey #1 - Surface (OH)

9,335.00 Survey #2 - Production (OH)

From (ft)

162 00

2,302.00

To

(ft) Survey (Wellbore)

**Tool Name** MWD SDI MWD SDI

Description

MWD - Standard ver 1.0.1 MWD - Standard ver 1.0.1



Survey Report - Geographic



Company: Project:

Kerr McGee Oil and Gas Onshore LP

Uintah County, UT UTM12

Site: Well:

NBU 922-31CT NBU 922-31CT

Wellbore: ОН Local Co-ordinate Reference:

TVD Reference: North Reference:

MD Reference:

Survey Calculation Method:

GL 4882' & RKB 18' @ 4900.00ft (Pioneer 69) GL 4882' & RKB 18' @ 4900.00ft (Pioneer 69)

Minimum Curvature

Weil NBU 922-31CT

Design:	ОН				Database:		EDM 200	3.16 Multi-User Db	
Survey					<del>a dayan da</del> A ji kacamatan wa				
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Map Northing	Map Easting		
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)	Latitude	Longitude
14.00	0.00	0.00	14.00	0.00	0.00	14,529,187.37	2,064,962.82	39° 59' 55.380 N	109° 29' 2.900 W
162.00	0.39	155.19	162.00	-0.46	0.21	14,529,186.91	2,064,963.04	39° 59' 55.375 N	109° 29' 2.897 W
252.00	0.11	73.58	252.00	-0.71	0.42	14,529,186.66	2,064,963.25	39° 59' 55.373 N	109° 29' 2.895 W
342.00	0.95	315.56	341.99	-0.15	-0.02	14,529,187.21	2,064,962.81	39° 59' 55.378 N	109° 29' 2.900 W
432.00	2.09	312.42	431.96	1.49	-1.75	14,529,188.82	2,064,961.04	39° 59' 55.395 N	109° 29' 2.922 W
522.00	2.55	315.56	521.89	4.02	-4.36	14,529,191.32	2,064,958.39	39° 59' 55.420 N	109° 29' 2.956 W
612.00	2.69	306.09	611.79	6.70	-7.47	14,529,193.94	2,064,955.23	39° 59' 55.446 N	109° 29' 2.996 W
702.00	3.02	315.83	701.68	9.64	-10.83	14,529,196.82	2,064,951.83	39° 59' 55.475 N	109° 29' 3.039 W
792.00	3.12	316.75	791.55	13.13	-14.16	14,529,200.25	2,064,948.44	39° 59' 55.510 N	109° 29' 3.082 W
882.00	3.66	314.50	881.40	16.92	-17.89	14,529,203.98	2,064,944.65	39° 59' 55.547 N	109° 29' 3.130 W
972.00	3.77	313.98	971.21	20.99	-22.07	14,529,207.98	2,064,940.40	39° 59' 55.587 N	109° 29' 3.184 W
1,062.00	3.77	312.42	1,061.01	25.04	-26.38	14,529,211.96	2,064,936.02	39° 59' 55.628 N	109° 29' 3.239 W
1,152.00		308.43	1,150.80	29.04	-31.09	14,529,215.88	2,064,931.24	39° 59' 55.667 N	109° 29' 3.300 W
1,242.00	3.70	309.90	1,240.59	32.91	-35.84	14,529,219.66	2,064,926.42	39° 59' 55.705 N	109° 29' 3.361 W
1,332.00	2.91	304.28	1,330.44	36.06	-39.96	14,529,222.74	2,064,922.25	39° 59' 55.736 N	109° 29′ 3.414 W
1,422.00	3.00	300.55	1,420.32	38.54	-43.88	14,529,225.16	2,064,918.29	39° 59' 55.761 N	109° 29' 3.464 W
1,512.00	2.36	303.49	1,510.22	40.76	-47.45	14,529,227.32	2,064,914.68	39° 59' 55.783 N	109° 29' 3.510 W
1,602.00	2.32	299.12	1,600.15	42.67	-50.59	14,529,229.17	2,064,911.51	39° 59' 55.802 N	109° 29' 3.550 W
1,692.00	2.36	289.92	1,690.07	44.19	-53.92	14,529,230.63	2,064,908.16	39° 59′ 55.817 N	109° 29' 3.593 W
1,812.00	2.08	304.95	1,809.98	46.28	-58.03	14,529,232.65	2,064,904.01	39° 59' 55.837 N	109° 29' 3.646 W
1,902.00	1.29	300.08	1,899.94	47.72	-60.24	14,529,234.06	2,064,901.77	39° 59' 55,852 N	109° 29' 3.674 W
1,992.00		284.05	1,989.92	48.43	-61.91	14,529,234.73	2,064,900.09	39° 59' 55.859 N	109° 29′ 3.696 W
2,082.00	1.18	274.87	2,079.91	48.70	-63.63	14,529,234.98	2,064,898.37	39° 59' 55.861 N	109° 29' 3.718 W
2,172.00		262.72	2,169.88	48.64	-65.67	14,529,234.88	2,064,896.34	39° 59' 55.861 N	109° 29' 3.744 W
2,232.00	1.31	257.53	2,229.87	48.40	-67.08	14,529,234.62	2,064,894.93	39° 59' 55.858 N	109° 29' 3.762 W
2,302.00	1.32	244.68	2,299.85	47.88	-68.59	14,529,234.07	2,064,893.43	39° 59' 55.853 N	109° 29′ 3.781 W
2,392.00		228.24	2,389.82	46.70	-70.35	14,529,232.86	2,064,891.68	39° 59' 55.842 N	109° 29' 3.804 W
2,494.00		213.56	2,491.79	44.82	-71.98 -73.40	14,529,230.95	2,064,890.09	39° 59' 55.823 N	109° 29' 3.825 W
2,583.00		204.51	2,580.76	42.79	-73.10	14,529,228.91	2,064,889.01	39° 59' 55.803 N	109° 29' 3.839 W
2,678.00 2,777.00		194.58	2,675.72	40.19	-74.01 74.86	14,529,226.29	2,064,888.14	39° 59' 55.777 N	109° 29' 3.851 W
		196.43	2,774.67	37.12	-74.86 -74.50	14,529,223.20	2,064,887.34	39° 59' 55.747 N	109° 29' 3.862 W
2,873.00		89.55	2,870.65	35.57	-74.58 -70.64	14,529,221.66	2,064,887.65	39° 59' 55.732 N	109° 29' 3.858 W
2,968.00	2.02 1.76	47.89	2,965.62	36.70	-72.61 -70.44	14,529,222.83	2,064,889.60	39° 59' 55.743 N	109° 29' 3.833 W
3,057.00		49.03	3,054.57	38.65	-70.41	14,529,224.81	2,064,891.76	39° 59' 55.762 N	109° 29' 3.805 W
3,158.00		57.91	3,155.53	40.45	-67.99	14,529,226.65	2,064,894.15	39° 59' 55.780 N	109° 29' 3.774 W
3,248.00	1.14 0.70	63.71	3,245.50	41.54	-66.08	14,529,227.78	2,064,896.04	39° 59' 55.791 N	109° 29' 3.749 W
3,346.00 3,434.00		84.45	3,343.49	42.03	-64.61	14,529,228.29	2,064,897.50	39° 59' 55.795 N	109° 29' 3.730 W
	0.26	134.29	3,431.49	41.94 42.50	-63.93	14,529,228.21	2,064,898.18	39° 59' 55.795 N	109° 29' 3.722 W
3,538.00		25.39	3,535.48	42.50	-63.42	14,529,228.78	2,064,898.68	39° 59' 55.800 N	109° 29' 3.715 W
3,626.00	1.58	20.82	3,623.46	44.24	-62.70 64.04	14,529,230.54	2,064,899.38	39° 59' 55.817 N	109° 29' 3.706 W
3,723.00		20.47	3,720.44	46.26	-61.94 61.50	14,529,232.57	2,064,900.10	39° 59' 55.837 N	109° 29′ 3.696 W
3,817.00		25.74	3,814.43	47.33	-61.50	14,529,233.65	2,064,900.52	39° 59' 55.848 N	109° 29' 3,690 W
3,916.00		155.47	3,913.43	47.60	-61.31 61.30	14,529,233.92	2,064,900.71	39° 59' 55.851 N	109° 29' 3,688 W
4,005.00 4,106.00	0.62 0.53	181.31 49.82	4,002.43 4,103.42	47.06	-61.29 -60.94	14,529,233.38	2,064,900.74	39° 59' 55.845 N	109° 29' 3.688 W
		82.43		46.81		14,529,233.14	2,064,901.09	39° 59' 55.843 N	109° 29′ 3.683 W
4,201.00 4,292.00		118.82	4,198.42 4,289.42	47.15 47.02	-60.25 -59.59	14,529,233.48	2,064,901.78	39° 59' 55,846 N	109° 29' 3.674 W
4,292.00		158.98	4,289.42		-59.59 -59.13	14,529,233.37	2,064,902.43	39° 59' 55.845 N	109° 29' 3.666 W
4,490.00	0.88	165.58	4,382.41	46.45 45.21	-59.13 -58.75	14,529,232.80	2,064,902.91	39° 59' 55.839 N	109° 29' 3.660 W
						14,529,231.58	2,064,903.31	39° 59' 55.827 N	109° 29' 3.655 W
4,581.00 4,671.00	1.06	163.55	4,578.39	43.73	-58.34 -58.38	14,529,230.10	2,064,903.74	39° 59' 55.812 N	109° 29' 3.650 W
4,671.00	0.35	262.26	4,668.39	42.90	-58.38	14,529,229.26	2,064,903.72	39° 59' 55.804 N	109° 29' 3.650 W
4,765.00	0.44	225.52	4,762.39	42.60	-58.92 60.48	14,529,228.96	2,064,903.19	39° 59' 55.801 N	109° 29' 3.657 W
4,958.00	0.97	206.53	4,955.37 5.043.37	40.62	-60.18	14,529,226.96	2,064,901.96	39° 59' 55.782 N	109° 29′ 3.673 W
5,046.00	0.26	65.56 68.81	5,043.37	40.04	-60.33	14,529,226.37	2,064,901.82	39° 59' 55.776 N	109° 29' 3.675 W
5,239.00	1.67	68.81	5,236.33	41.24	-57.31	14,529,227.62	2,064,904.82	39° 59' 55.788 N	109° 29' 3.636 W



Survey Report - Geographic



Company: Project:

Kerr McGee Oil and Gas Onshore LP

Uintah County, UT UTM12

Site: Well: NBU 922-31CT NBU 922-31CT

Wellbore: OH
Design: OH

Local Co-ordinate Reference:

TVD Reference: MD Reference: Well NBU 922-31CT

GL 4882' & RKB 18' @ 4900.00ft (Pioneer 69) GL 4882' & RKB 18' @ 4900.00ft (Pioneer 69)

North Reference:

Survey Calculation Method:

Minimum Curvature

Database: EDM 2003.16 Multi-User Db

urvey					en de la competition.				n 1980, italijas karjas.
Measured			Vertical			Map	Мар		
Depth	Inclination	Azimuth	Depth	+N/-S	+E/-W	Northing	Easting		
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)	Latitude	Longitude
5,426.00	1.32	85.68	5,423.27	42.38	-52.62	14,529,228.85	2,064,909.49	39° 59' 55.799 N	109° 29' 3.576 W
5,616.00	1.32	97.02	5,613.22	42.28	-48.26	14,529,228.82	2,064,913.84	39° 59' 55.798 N	109° 29' 3.520 W
5,806.00	1.41	113.28	5,803.17	41.09	-43.94	14,529,227.70	2,064,918.18	39° 59' 55.786 N	109° 29' 3.465 W
5,998.00	1.49	121.45	5,995.11	38.85	-39.64	14,529,225.54	2,064,922.52	39° 59' 55.764 N	109° 29' 3,409 W
6,182.00	1.76	130.33	6,179.03	35.78	-35.45	14,529,222.54	2,064,926.77	39° 59' 55.734 N	109° 29' 3.356 W
6,381.00	1.85	138.77	6,377.93	31.38	-31.00	14,529,218.22	2,064,931.29	39° 59' 55.690 N	109° 29' 3.298 W
6,470.00	0.70	163.47	6,466.91	29.78	-29.90	14,529,216.64	2,064,932.42	39° 59' 55.674 N	109° 29' 3.284 W
6,566.00	0.26	329.40	6,562.91	29.41	-29.85	14,529,216.26	2,064,932.48	39° 59' 55.671 N	109° 29' 3.284 W
6,660.00	0.35	313.50	6,656.91	29.79	-30.16	14,529,216.64	2,064,932.15	39° 59' 55.674 N	109° 29' 3.288 W
6,756.00	1.06	349.18	6,752.90	30.86	-30.54	14,529,217.71	2,064,931.76	39° 59' 55.685 N	109° 29' 3.293 W
6,946.00	0.88	6.76	6,942.87	34.04	~30.70	14,529,220.88	2,064,931.54	39° 59' 55.716 N	109° 29′ 3.295 W
7,137.00	0.44	36.46	7,133.86	36.08	-30.09	14,529,222.93	2,064,932.12	39° 59' 55.737 N	109° 29' 3.287 W
7,314.00	0.44	123.83	7,310.86	36.25	-29.12	14,529,223.12	2,064,933.08	39° 59' 55.738 N	109° 29' 3.274 W
7,514.00	0.70	106.43	7,510.85	35.48	-27.31	14,529,222.38	2,064,934.91	39° 59' 55.731 N	109° 29' 3.251 W
7,702.00	1.14	149.58	7,698.83	33.54	-25.26	14,529,220.47	2,064,936.99	39° 59' 55.712 N	109° 29' 3.225 W
7,896.00	1.41	153.71	7,892.78	29.74	-23.23	14,529,216.71	2,064,939.09	39° 59' 55.674 N	109° 29' 3.199 W
8,056.00	0.88	134.81	8,052.75	27.11	-21.49	14,529,214.10	2,064,940.87	39° 59' 55.648 N	109° 29′ 3.176 W
8,146.00	1.06	130.51	8,142.73	26.08	-20.36	14,529,213.10	2,064,942.02	39° 59' 55.638 N	109° 29' 3.162 W
8,341.00	1.06	150.90	8,337.70	23.33	-18.12	14,529,210.39	2,064,944.31	39° 59' 55.611 N	109° 29' 3.133 W
8,525.00	1.67	144.57	8,521.65	19.66	-15.73	14,529,206.76	2,064,946.75	39° 59' 55.574 N	109° 29' 3.102 W
8,717.00	2.81	131.83	8,713.50	14.24	-10.60	14,529,201.43	2,064,951.97	39° 59' 55,521 N	109° 29' 3.036 W
8,906.00	1.58	139.82	8,902.36	9.16	-5.47	14,529,196.43	2,064,957.19	39° 59' 55.471 N	109° 29' 2.970 W
9,102.00	1.85	122.86	9,098.27	5.38	-1.07	14,529,192.73	2,064,961.66	39° 59′ 55.433 N	109° 29' 2.914 W
9,269.00	0.44	162.76	9,265.23	3,30	1.38	14,529,190.69	2,064,964.15	39° 59' 55.413 N	109° 29' 2.882 W
9,335.00	0.44	162.76	9,331.23	2.82	1.53	14,529,190.21	2,064,964.31	39° 59' 55.408 N	109° 29' 2.880 W

Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
NBU 922-31CT Rectang - actual wellpath miss - Rectangle (sides W		ter by 44.02ft	9,356.00 at 9335.00	-25.00 ft MD (9331.23	25.00 3 TVD, 2.82 N	14,529,162.80 I, 1.53 E)	2,064,988.24	39° 59′ 55.133 N	109° 29' 2.579 W
NBU 922-31CT PBHL - actual wellpath miss - Circle (radius 25.00			9,356.00 at 9335.00	0.00 ft MD (9331.23	0.00 3 TVD, 2.82 N	14,529,187.37 I, 1.53 E)	2,064,962.82	39° 59′ 55.380 N	109° 29′ 2.900 W

Design Annotations				
Measured	Vertical	Local Co	ordinates	
Depth	Depth	+N/-S	+E/-W	입니다. 그렇게 다 아름이로 생물이 하라고 가게 되었다. 나를 하고 있다.
(ft)	(ft)	(ft)	(ft)	Comment
162.00	162.00	-0.46	0.21	First SDI Surface MWD Survey
2,232.00	2,229.87	48.40	-67.08	Last SDI Surface MWD Survey
2,302.00	2,299.85	47.88	-68.59	First SDI Production MWD Survey
9,269.00	9,265.23	3.30	1.38	Last SDI Produtction MWD Survey
9,335.00	9,331.23	2.82	1.53	Projection To TD

Checked By:	Approved By:	Date:	



# SUPPORT STAFF

D'Arcy Quinn - Rocky Mountain Region Manager (307) 472-6621 darcy.quinn@scientificdrilling.com

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Charles Paladino - Directional Drilling Coordinator (970) 245-9447
<a href="mailto:charles.paladino@scientificdrilling.com">charles.paladino@scientificdrilling.com</a>

Justin Stetz - MWD Coordinator (307) 472-6621 Justin.stetz@scientificdrilling.com

Johnny Aguilar - MWD Coordinator (970) 245-9447 johnny.aguilar@scientificdrilling.com

**Directional Drillers:** 

MWD Operator: D. Clements, J. Hone

7237 W. Barton Rd., Casper, WY 82604 P.O. Box 1600, Mills, WY 82644 (307) 472-6621

## **Operation Summary Report**

Well: NBU 922	-31CT			Spud Co	nductor:	10/27/20	009	Spud Date: 11/3	30/2009
Project: UTAH	-UINTAH	1		Site: NBI	J 354 P/	AD			Rig Name No: PIONEER 69/69, PROPETRO/
Event: DRILLIN	VG			Start Dat	e: 10/22	/2009			End Date: 1/3/2010
Active Datum:	RKB@4	,900.00ft (	(above Mean	Sea Leve	UWI: N	E/NW/0/9	9/\$/22	/E/31/0/0/26/PM/N/	/389.00/W/0/1,632.00/0/0
Date		fime art-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
11/30/2009		- 9:00	2.00	MIRU	01	Α	Р		MOVE RIG FROM TOWN TO LOCTION
		- 13:30	4.50	MIRU	01	В	P		RIG UP HSM
		- 15:30	2.00	DRLSUR	02	Α	P		SPUD W/ AIR HAMMER DRILL F/ 40 TO 180
		- 18:30	3.00	DRLSUR	06	Α	P		TOH W/ AIR HAMMER TOOLS P/U MWD TOOLS
		- 0:00	5.50	DRLSUR	02	D	P		DRILL F/ 180 TO 720' WT 18 -20K RPM 40 MM RPN 104, PUMP 1500 ON BOTTOM OFF 1250 PSI
12/1/2009		- 17:30	17.50	DRLSUR	02	D	Р		DRLG, SURVEY F/ 720 TO 2280 WT 18-20 K RPM 40 MM RPM 104 PUMP PSI 1550 ON BOTTOM OFF 1300 PSI 1560 89.1 ROP
		- 18:30	1.00	DRLSUR	05	Α	P		CIRC PUMP SWEEP AROUND
		- 22:30	4.00	DRLSUR	06	Α	P	,	TOH TO LAY DOWN MWD TOOLS
	22:30	- 0:00	1.50	DRLSUR	12	Α	P		RIG UP HSM RUN 51 JTS 9 5/8 J-55 # 36 LT&C SHOE @ 2251 BAF 2207
12/2/2009		- 2:30	2.50	DRLSUR	12	С	Р	4.1	RUN 51 JTS 9 5/8 CSG, SHOE @ 2251' BAFF 2207'
	2:30	- 10:00	7.50	DRLSUR	12	E	Р		RIGED UP HSM LEAD CMT 210 SX 11.0 YD 3.82 TAIL 200 SX 15.8 YD 1.15 2% CAL, .25 LBSX FLOW SEALBUMP PLUG FLOATS HELD DID 3 TOP JOB 325 SX 15.8 4% CAL .25 LBSSX FLOW SEAL
12/25/2009	20:00	- 0:00	4.00	DRLPRO	01	E	Р		RDRT
12/26/2009	0:00	- 8:00	8.00	DRLPRO	01	E	P		RDRT, WINTERIZE RIG
:	8:00	- 17:30	9.50	DRLPRO	01	A	P		MOVE RIG 6.5 MILES TO NBU 922-31CT, 3-BED, 6 HAUL TRUCKS, 2 FORKLIFTS, 1 CRANE, 1 GRADER TO HELP HEAVEY LOADS UP STEEP HILLS, 1 EXTRA RIG HAND
	17:30	- 18:00	0.50	DRLPRO	01	В	P		RURT, 100% MOVED, 40% R/U
		- 0:00	6.00	DRLPRO	21	С	P	AND STATE	WAIT ON DAYLIGHT
12/27/2009		- 6:00	6.00	DRLPRO	21	С	Р		WAIT ON DAYLIGHT
		- 10:00	4.00	DRLPRO	01	A	η <b>P</b>		FINISH SETTING IN RIG, TRUCKS LEFT @ 09:00, CRANE LEFT @ 10:00, RURT
		- 22:00	12.00	DRLPRO	01	В	Р		RURT, RISE FLOOR & DERRICK
		- 0:00	2.00	DRLPRO	14	A	Р		N/U BOPE
12/28/2009		- 2:00	2.00	DRLPRO	14	Α	Р		N/U BOPE
		- 9:00	7.00	DRLPRO	15	A	P		TEST BOP, RAMS & ALL VALVES 250 LOW-5000HIGH, ANN 2500, CASING1500 F/ 30 MIN
	9:00	- 14:00	5.00	DRLPRO	06	Α	P		HPJSM W/ RIG & P/U CREWS, R/U & P/U BIT,MM,DIR TOOLS & SCRIBE, BHA & 50 JTS D/P TO 2119'
	14:00	- 15:30	1.50	DRLPRO	09	Α	P		CUT & SLIP DRLG LINE
	15:30	- 19:00	3.50	DRLPRO	02	F	Р		INSTALL ROT RUBBER , KELLY DRIVE BUSHINGS PRE- SPUD INSECTION, DRLG CEMENT, F/E & OPEN HOLE TO 2294, SPUD WELL @ 19:00 12/28/09
	19:00	- 0:00	5.00	DRLPRO	02	В	P		DRLG,SLIDE SURVEY F/ 2294 TO 2940', WOB 18-20, RPM 50, MM 98, SPM 125, GPM 473,
. X	A	1	43 NA	1. 1.1	e et	, j., e	5.6		PU/SO/ROT 100-97-95, ON/OFF 1350-1100, DIFF 150-300, CIRC RESERVE PIT W/ GEL & POLY
	38.5 ×						M.L		SWEEPS, SLIDES 2845-2860, 2940-2950
12/29/2009	0:00	- 15:00	15.00	DRLPRO	02	В	Р		DRLG,SLIDE,SURVEY F/ 2940 TO 4740', 1800' @ 120' PH, CIRC RESERVE PIT W/ GEL & POLY
	15:00	- 15:30	0.50	DDLDDA	0-2	Α.	-		SWEEPS
	10.00	10.30	0.50	DRLPRO	07	Α	Р		SERVICE RIG

2/25/2010

3:42:43PM

## Operation Summary Report

Well: NBU 922	-31CT		Spud Co	nductor	10/27/2	2009	Spud Date: 11/3	30/2009		
Project: UTAH-	UINTAH		Site: NBI	J 354 P	AD			Rig Name No: PIONEER 69/69, PROPETRO/		
Event: DRILLIN	1G		Start Dat	e: 10/22	/2009			End Date: 1/3/2010		
Active Datum:	RKB @4,900.0	Oft (above Mean	Sea Leve	UWI: N	E/NW/0/	/9/S/22/E	E/31/0/0/26/PM/N/	1/0/0/26/PM/N/389.00/W/0/1,632.00/0/0		
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation		
12/30/2009	15:30 - 0:0 0:00 - 8:3		DRLPRO	02	В	P		DRLG,SLIDE,SURVEY F/ 4740 TO 5847', 1107' @ 130.2' PH CIRC RESERVE PIT W/ GEL & POLY SWEEPS, WOB 18, RPM 50, MM 98, SPM 125, GPM 473, PU/SO/ROT 155-141-137, ON/OFF 1630-1270, DIFF 150-400, SLIDES 5025-5035, 5120-5130 DRLG,SLIDE,SURVEY F/ 5847 TO 6546'. SLIDE		
12/30/2009	8:30 - 9:0		DRLPRO	02	A	P		DREG, SCIDE, SURVEY F/ 3647 TO 6546 . SCIDE F/6447 TO 6459, SERVICE RIG		
	9:00 - 21:		DRLPRO	02	В	Р		DRLG,SLIDE,SURVEY F/ 6546 TO 7388', 842' @		
	21:00 - 21:		DRLPRO	08	В	Р		70.2' PH SLIDES 6546-6556 REPLACE VALVES #2 PUMP		
· · · · · · · · · · · · · · · · · · ·	21:30 - 0:0	0 2.50	DRLPRO	02	В	P		DRLG F/ 7388 TO 7595', 207' @ 82.8' PH, WOB 18,		
								RPM 50, MM 98, SPM 125, GPM 473, PU/SO/ROT 184-150-164, ON/OFF 2100-1800, DIFF 150-300, SLIDES 7394-7404		
12/31/2009	0:00 - 12:	30 12.50	DRLPRO	02	В	Р		DRLG F/ 7595 TO 8342' ,747' @ 59.8' PH		
	12:30 - 13:		DRLPRO	07	À	Р		SERVICE RIG		
	13:00 - 14:	00 1.00	DRLPRO	08	В	Z		REPAIR PUMP & 4" VALVE		
	14:00 - 0:0	0 10.00	DRLPRO	02	В	P		DRLG,SLIDE SURVEY F/ 8342 TO 8816', 474' @ 47.4' PH, WOB 20, MW 11.2, VIS 40, SPM 125, GPM 473, PU/SO/ROT 200-155-173, ON/OFF 2500-2250, DIFF 150-250, SLIDES 8525-8535, 8783-8793, 8812-8822		
1/1/2010	0:00 - 1:0	0 1.00	DRLPRO	02	В	P		DRLG F/ 8816 TO 8824', 8' @ 8' PH		
	1:00 - 2:0	0 1.00	DRLPRO	08	В	P		REPLACE DRIVE LINE BOLTS TO ROT		
	2:00 - 14:		DRLPRO	02	В	Р		DRLG F/ 8824 TO 9335', 511' @ 40.1' PH, MW 11.7, VIS 45, TD @ 14:30 1/1/10		
	14:30 - 15:		DRLPRO	07	Α	P		SERVICE RIG		
	15:00 - 18:		DRLPRO	05	С	Р		CIRC & COND WELL BORE		
	18:00 - 23:		DRLPRO	06	E.	Р		SHORT TRIP TO SHOE 112 STDS		
	23:00 - 0:0		DRLPRO	05	С	P		CIRC & COND WELL BORE F/LDDS		
1/2/2010	0:00 - 1:3	,	DRLPRO	05	C	P		CIRC & COND HOLE F/ LOGS		
	1:30 - 10:		DRLPRO	06	В	P		HPJSM W/ RIG & L/D CREWS, R/U & LDDS, BREAK KELLY, L/D BHA & DIR TOOLS, PULL WEAR BUSHING, R/D		
	10:30 - 11:		DRLPRO	07	Α .	Р		SERVICE RIG		
	11:00 - 16: 16:30 - 22:		DRLPRO	11 12	С	P P		HPJSM W/ RIG & LOGGING CREWS, R/U & RUN TRIPLE COMBO F/ 9363 TO SURFACE HPJSM W/ RIG & CASING CREWS, R/U & RUN 220		
	22:00 - 0:0		DRLPRO	05	D	P	*"."	JTS I-80 BTC PROD CASING CIRC OUT GAS TO CEMENT		
1/3/2010	0:00 - 2:0		DRLPRO	05	D	Р		CIRC OUT GAS		
- 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10	2:00 - 7:0		DRLPRO	12	E	P		HPJSM W/ RIG & CEMENTING CREWS, R/U & TEST LINES TO 5000 PSI, PUMP 40 BBLS WATER SPACER, LEAD 475 SKS 11.7 PPG 2.49 YLD, TAIL 1276 SKS 14.3 PPG 1.31 YLD, DROP PLUG & DISPLACE W/ 145 BBLS CLAYTREAT WATER, BUMP PLUG W/ 3200 PSI, FINAL LIFT PSI OF 2300, FULL RETURNS THOUGH OUT JOB, 15 BBLS CEMENT TO PITS, 1 BACK TO TRUCK, FLUSH		
	7:00 - 12:	5.00	DRLPRO	01	E	P		OUT STACK & LAND CASING W/ 65K,, R/D N/D & CLEAN PITS, WINTERIZE RIG, RELEASE RIG TO NBU 922-32P3CS @ 12:00 1/3/10		

2/25/2010 3:42:43PM

# Operation Summary Report

· · · · · · · · · · · · · · · · · · ·				Spud C	onductor	: 10/27/2	2009	Spud Date: 11	30/2009		
Project: UTAH	-UINTAH			Site: NE	U 354 P	AD			Rig Name No: GWS 1/1		
Event: COMPL	LETION			Start Da	ite: 1/21/2010				End Date:		
Active Datum: RKB @4,900.00ft (above Mean Sea Level)					UWI: N	UWI: NE/NW/0/9/S/22/E/31/0/0/26/PM/N/389.00/W/0/1,632.00/0/0					
Date	Star	me t-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation		
1/21/2010	7:00		0.50	COMP	48		Р		HSM. PICKING UP TBG OFF TRAILER		
		- 17:00	9.50	COMP	31	I	P		RU RIG & SPOT IN EQUIPMENT. ND WH NU BOF PU 3 7/8" MILL & SUB. DRIFT & TALLY 226 JTS OF 2 3/8" J-55 4.7# TBG. EOT @ 7,016'. POOH W / 113 STANDS OF 2 3/8" TBG. ND BOP NU FRAC VALVES. WINTERIZE WELL HEAD. SWI SDFN		
1/22/2010	7:00		0.50	COMP	48		Р		HSM. PRESSURE TESTING & PERFORATING		
		- 15:00	7.50	COMP	37	С	Р		MIRU B&C QUICK TEST TO PRESSURE TEST. PRESSURE TEST CASING & BOTH FRAC VALVES TO 7,000 PSI. GOOD TEST. RDMO B&C QUICK TEST. MIRU SCHLUMBERGER TO PERFORATE. PU 3 1/8 EXP GNS, 23 GRM, .36 HOLES, 90 DEG. PHASING. RIH PERF 9,257'-59' 4SPF, 9,206'-12' 4SPF, 9,171'-73' 4SPF, 40 HOLES. RDMO SCHLUMBERGER. WINTERIZE WELL HEAD. PREPPED TO FRAC ON MONDAY. SWI SDFWE.		
1/25/2010	6:30	- 7:00	0.50	COMP	48		Р		HSM. FRACING & PERFORATING		
	7:00	- 7:40	0.67	COMP	36	В	Р		MIRU FRAC TECH & SCHLUMBERGER. PRIME UP & PRESSURE TEST SURFACE EQUIPMENT TO 8,000 PSI. HAVING PROBLEMS W / SCALE INHIBITOR PUMP.		
	7:40	- 8:10	0.50	COMP	36	В	Р		STG 1 ) WHP 1,728 PSI, BRK 4,346 PSI, @ 6.2 BPM, ISIP 2,523 PSI, FG .71. PUMP 100 BBLS @ 51 BPM @ 4,700 PSI = 83% OPEN. MP 6,575 PSI, MR 52 BPM, AP 4,866 PSI, AR 51 BPM, ISIP 3,033 PSI, FG .76, NPI 510 PSI. PMP 888 BBLS OF SW & 17,505 LBS OF 30/50 SND & 5,000 LBS OF 20/40 RESIN SND. TOTAL PROP 22,505 LBS.		
	8:10	- 11:05	2.92	COMP	36	В	P		STG 2 ) PU 4 1/2" BAKER CBP & 3 1/8" EXP GNS, 23 GRM, .36 HOLES, 90 DEG PHASING. RIH SET CBP @ 8,976' & PERF 8,944'-46' 4SPF, 8,857'-60' 4SPF, 8,784'-86' 4SPF, 8,748'-50' 4SPF, 8,737'-38' SPF, 40 HOLES WHP 1,580 PSI, BRK 3,880 PSI, @ 8.0 BPM, ISIP 2,523 PSI, FG .72. PUMP 100 BBLS @ 51.3 BPM @ 4,630 PSI = 85% OPEN. MP 6,301 PSI, MR 52 BPM, AP 4,480 PSI, AR 51.6 BPM, ISIP 2,820 PSI, FG .75, NPI 293 PSI. PMP 1,894 BBLS OF SW & 67,587 LBS OF 30/50		
i i i i i i i i i i i i i i i i i i i			and the second						SND & 5,000 LBS OF 20/40 RESIN SND. TOTAL		
	di sa ay	4 4 4 10					1.00	And the leave	PROP 72,587 LBS.		

			O	perat	ion S	umm	ary Repor	t
Well: NBU 922	2-31CT		Spud Co	onductor	10/27/2	009	Spud Date: 1	1/30/2009
Project: UTAH	-UINTAH		Site: NB	U 354 P	AD			Rig Name No: GWS 1/1
Event: COMPL	ETION		Start Da	te: 1/21/2	2010	T		End Date:
Active Datum: Level)	RKB @4,900.00ft (a	above Mean	Sea	UWI: N	E/NW/0/	9/S/22/E	E/31/0/0/26/PM/	N/389.00/W/0/1,632.00/0/0
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	11:05 - 12:55	1.83	COMP	36	В	P		STG 3 ) PU 4 1/2" BAKER CBP & 3 1/8" EXP GNS, 23 GRM, 36 HOLES, 90 DEG PHASING. RIH SET CBP @ 8,665' & PERF 8,628'-30' 4SPF, 8,557'-58' 4SPF, 8,502'-05' 4SPF, 8,444'-46' 4SPF, 8,387'-88' SPF, 36 HOLES WHP 1,741 PSI, BRK 3,118 PSI, @ 7.0 BPM, ISIP 2,318 PSI, FG .71. PUMP 100 BBLS @ 51.1 BPM @ 4,880 PSI = 75% OPEN. MP 6,421 PSI, MR 53.1 BPM, AP 4,344 PSI, AR 51.7 BPM, ISIP 2,779 PSI, FG .76, NPI 461 PSI. PMP 1,545 BBLS OF SW & 57,707 LBS OF 30/50 SND & 5,000 LBS OF 20/40 RESIN SND. TOTAL PROP 62,707 LBS.
	12:55 - 14:30	1.58	COMP	36	В	P		STG 4 ) PU 4 1/2" BAKER CBP & 3 1/8" EXP GNS, 23 GRM, .36 HOLES, 90 DEG PHASING. RIH SET CBP @ 8,268' & PERF 8,234'-38' 4SPF, 8,183'-85' 4SPF, 8,109'-11' 4SPF, 8,046'-48' 4SPF, 40 HOLES WHP 0 PSI, BRK 4,352 PSI, @ 5.8 BPM, ISIP 2,181 PSI, FG .70. PUMP 100 BBLS @ 51.7 BPM @ 4,304 PSI = 82% OPEN. MP 6,313 PSI, MR 52.5 BPM, AP 4,250 PSI, AR 51.9 BPM, ISIP 2,459 PSI, FG .74, NPI 278 PSI. PMP 987 BBLS OF SW & 31,974 LBS OF 30/50 SND & 5,000 LBS OF 20/40 RESIN SND. TOTAL
	14:30 - 16:00	1.50	COMP	36	В	P		PROP 36,974 LBS. STG 5 ) PU 4 1/2" BAKER CBP & 3 1/8" EXP GNS, 23 GRM, 36 HOLES, 90 DEG PHASING. RIH SET CBP @ 7,929' & PERF 7,897'-99' 4SPF, 7,812'-14' 4SPF, 7,762'-63' 4SPF, 7,740'-42' 4SPF, 7,689'-90' 4SPF, 7,659'-60' 4SPF, 36 HOLES WHP 1,180 PSI, BRK 2,009 PSI, @ 7.5 BPM, ISIP 2,481 PSI, FG .75. PUMP 100 BBLS @ 51.2 BPM @ 4,960 PSI = 61% OPEN. MP 6,375 PSI, MR 52.5 BPM, AP 4,250 PSI, AR 51.8 BPM, ISIP 2,481 PSI, FG .75, NPI 747 PSI. PMP 986 BBLS OF SW & 33,417 LBS OF 30/50 SND & 5,000 LBS OF 20/40 RESIN SND. TOTAL PROP 38,417 LBS.
	16:00 - 17:30	1.50	COMP	37	В	P		STG 6 ) PU 4 1/2" BAKER CBP & 3 1/8" EXP GNS, 23 GRM, .36 HOLES, 90 DEG PHASING. RIH SET CBP @ 7,587' & PERF 7,554'-57' 4SPF, 7,466'-68' 4SPF, 7,419'-22' 4SPF, 7,398'-7,400' 4SPF, 40 HOLES
1/26/2010	6:30 - 7:00	0.50	COMP	48		P		HSM. FRACING & PERFORATING
	7:00 - 8:05	1.08	COMP	46	Ε	Z		WORKING ON BLENDER. WILL NOT START.
	8:05 - 8:30	0.42	COMP	36	В	P		STG 6 ) WHP 1,230 PSI, BRK 3,267 PSI, @ 3.1 BPM, ISIP 1,527 PSI, FG .64. PUMP 100 BBLS @ 51 BPM @ 4,800 PSI = 60% OPEN. MP 6,528 PSI, MR 53 BPM, AP 4,059 PSI, AR 51.9 BPM, ISIP 2,119 PSI, FG .72, NPI 592 PSI. PMP 939 BBLS OF SW & 32,950 LBS OF 30/50 SND & 5,000 LBS OF 20/40 RESIN SND. TOTAL PROP 37,950 LBS.

Well: NBU 922-	31CT		Spud C	onductor	10/27/2	1009	Spud Date: 11	1/30/2009
Project: UTAH-l	UINTAH		Site: NE	354 P	AD			Rig Name No: GWS 1/1
Event: COMPLE	ETION		Start Da	Date: 1/21/2010				End Date:
Active Datum: R Level)	RKB @4,900.00ft (at	oove Mean	Sea	UWI: N	E/NW/0	/9/S/22/E/3	31/0/0/26/PM/I	N/389.00/W/0/1,632.00/0/0
Date	Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	8:30 - 10:25 10:25 - 11:55	1,92	COMP	36	В	P		STG 7 ) PU 4 1/2" BAKER CBP & 3 1/8" EXP GNS, 23 GRM, 36 HOLES, 90 DEG PHASING. RIH SET CBP @ 7,333' & PERF 7,300'-03' 4SPF, 7,287'-88' 4SPF, 7,234'-38' 4SPF, 7,182'-84' 4SPF, 40 HOLES WHP 626 PSI, BRK 3,000 PSI, @ 7.2 BPM, ISIP 2,067 PSI, FG .72. PUMP 100 BBLS @ 51.5 BPM @ 4,180 PSI = 75% OPEN. MP 6,283 PSI, MR 54 BPM, AP 3,940 PSI, AR 51.8 BPM, ISIP 2,460 PSI, FG .77, NPI 393 PSI. PMP 1,501 BBLS OF SW & 54,068 LBS OF 30/50 SND & 5,000 LBS OF 20/40 RESIN SND. TOTAL PROP 59,068 LBS. STG 8 ) PU 4 1/2" BAKER CBP & 3 1/8" EXP GNS.
	10.25 - 11:55	1.50	COMP	36	В	<b>P</b>		STG 8 ) PU 4 1/2" BAKER CBP & 3 1/8" EXP GNS, 23 GRM, .36 HOLES, 90 DEG PHASING. RIH SET CBP @ 7,153' & PERF 7,118'-28' 4SPF, 40 HOLES WHP 680 PSI, BRK 2,658 PSI, @ 7.0 BPM, ISIP 1,221 PSI, FG .60. PUMP 100 BBLS @ 52.7 BPM @ 3,590 PSI = 70% OPEN. MP 6,146 PSI, MR 54.8 BPM, AP 3,550 PSI, AR 52.4 BPM, ISIP 2,299 PSI, FG .76, NPI 1,078 PSI. PMP 1,293 BBLS OF SW & 52,012 LBS OF 30/50 SND & 5,000 LBS OF 20/40 RESIN SND. TOTAL PROP 57,012 LBS.
	11:55 - 13:00	1.08	COMP	34	ı	Р		KILL PLG ) PU 4 1/2" BAKER CBP & RIH SET @ 7,068'
	13:00 - 17:00	4.00	COMP	31	I	P		RDMO FRAC TECH & SCHLUMBERGER. ND FRAC VALVES NU BOP. PU 3 7/8" BIT & POBS & RIH W / 226 JTS OF 2 3/8" J-55 TBG.EOT @ 7,016'. RU POWER SWIVEL. WINTERIZE WELL HEAD. SWI SDFN
1/27/2010	7:00 - 7:30	0.50	COMP	48		Р		HSM. DRILLING CBP'S UNDER PRESSURE

3/1/2010

4:42:56PM

## **Operation Summary Report**

Well: NBU 922	-3101			Spud Co	naaoton.	10,2,,2		Spud Date: 11/	
Project: UTAH-	-UINTAH	l 		Site: NBI	J 354 PA	'D			Rig Name No: GWS 1/1
		Start Dat	ate: 1/21/2010				End Date:		
Active Datum: RKB @4,900.00ft (above Mean Sea Level)			Sea	UWI: NE/NW/0/9/S/22/E/31/0/0/26/PM/N/				/389.00/W/0/1,632.00/0/0	
Date	Sta	Time art-End	Duration (hr)	Phase		Sub Code	P/U	MD From (ft)	Operation
	<i>r</i> :30	- 18:00	10.50	COMP	44	C	P		WHP 0 PSI. BRK CIRCULATION W / TMAC WATER. RIH C/O 20' OF SAND TAG PLG 1 @ 7,068' DRL IN 9 MIN. 50 PSI INCREASE. RIH. C/O 30' OF SAND TAG PLG 2 @ 7,158' DRL IN 10 MIN. 500 PSI INCREASE. RIH. C/O 30' OF SAND TAG PLG 3 @ 7,333' DRL IN 6 MIN. 500 PSI INCREASE. RIH. C/O 60' OF SAND TAG PLG 3 @ 7,068' DRL IN 8 MIN. 750 PSI INCREASE. RIH. C/O 30' OF SAND TAG PLG 5 @ 7,929' DRL IN 30 MIN. 800 PSI INCREASE. RIH. C/O 30' OF SAND TAG PLG 5 @ 8,268' DRL IN 7 MIN. 300 PSI INCREASE. RIH. C/O 30' OF SAND TAG PLG 7 @ 8,665' DRL IN 7 MIN. 500 PSI INCREASE. RIH. C/O 30' OF SAND TAG PLG 7 @ 8,665' DRL IN 7 MIN. 500 PSI INCREASE. RIH. C/O 30' OF SAND TAG PLG 8 @ 8,976' DRL IN 8 MIN. 400 PSI INCREASE. RIH. C/O TO 9,285' PBTD. CIRC WELL CLEAN. POOH LD 19 JTS OF 2 3/8" TBG. LAND 2 3/8" J-55 4.7# TBG W / 281 JTS. EOT @ 8,713.51'. ND BOP NU WELL HEAD. DROP BALL TO SHEAF OFF BIT. PUMP OFF BIT @ 2,450 PSI. TURN WELL OVER TO FLOW TESTERS.
1/28/2010	7:00				33	A			306 JTS OUT BOUND 281 JTS LANDED 25 JTS RETURNED 7 AM FLBK REPORT: CP 2550#, TP 2325#, 20/64"
<del></del>						•			CK, 58 BWPH, MEDIUM SAND, - GAS TTL BBLS RECOVERED: 5034 BBLS LEFT TO RECOVER: 4999
1/29/2010	7:00	-			33	A			7 AM FLBK REPORT: CP 3150#, TP 2300#, 20/64" CK, 38 BWPH, MEDIUM SAND, - GAS TTL BBLS RECOVERED: 3032
	10:00	-		PROD	50				BBLS LEFT TO RECOVER: 4001 WELL TURNED TO SALES @ 1130 HR 1/29/2010 2000 MCFD, 1032 BWPD, CP 3150#, FTP 2300#, CK 20/64"
1/30/2010	7:00	-			33	A			7 AM FLBK REPORT: CP 3000#, TP 2225#, 20/64* CK, 35 BWPH, MEDIUM SAND, - GAS TTL BBLS RECOVERED: 6837 BBLS LEFT TO RECOVER: 3196
1/31/2010	7:00	-			33	Α.			7 AM FLBK REPORT: CP 2800#, TP 2125#, 20/64* CK, 30 BWPH, MEDIUM SAND, - GAS TTL BBLS RECOVERED: 7590 BBLS LEFT TO RECOVER: 2443
2/1/2010	7:00	•			33	Α			7 AM FLBK REPORT: CP 2650#, TP 2000#, 20/64* CK, 25 BWPH, LIGHT SAND, - GAS TTL BBLS RECOVERED: 8208 BBLS LEFT TO RECOVER: 1825
ter et et e	7:30	<b>4</b>		PROD	50	* 5		(* v)	MELLINID ON SIGNA STORE SOOT SOOT SO
	1			ewi en en en					WELL IP'D ON 2/1/10 - 2721 MCFD, 200 BOPD, 40 BWPD, CP 2685#, FTP 2040#, CK 20/64", LP 142#, 24 HRS

3/1/2010

4:42:56PM

	STATE OF UTAH		FORM 9
	DEPARTMENT OF NATURAL RESOURCE DIVISION OF OIL, GAS, AND MIN		5.LEASE DESIGNATION AND SERIAL NUMBER: UTU-0464
SUNDE	RY NOTICES AND REPORTS	ON WELLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
Do not use this form for propos bottom-hole depth, reenter plu DRILL form for such proposals.	7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES		
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 922-31CT
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONSI	HORE, L.P.		<b>9. API NUMBER:</b> 43047502260000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th S	treet, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6587 Ext	9. FIELD and POOL or WILDCAT: NATURAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0389 FNL 1592 FWL			COUNTY: UINTAH
QTR/QTR, SECTION, TOWNSHI Qtr/Qtr: NENW Section: 31	IP, RANGE, MERIDIAN: Township: 09.0S Range: 22.0E Meridian:	S	STATE: UTAH
11. CHE	CK APPROPRIATE BOXES TO INDICAT	E NATURE OF NOTICE, REPORT,	OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
	ACIDIZE	ALTER CASING	CASING REPAIR
✓ NOTICE OF INTENT Approximate date work will start:	✓ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	CHANGE WELL NAME
5/21/2009	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	CONVERT WELL TYPE
SUBSEQUENT REPORT	DEEPEN	FRACTURE TREAT	☐ NEW CONSTRUCTION
Date of Work Completion:	OPERATOR CHANGE	PLUG AND ABANDON	☐ PLUG BACK
_	PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION
SPUD REPORT Date of Spud:	REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
☐ DRILLING REPORT	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	APD EXTENSION
Report Date:	□ WILDCAT WELL DETERMINATION	OTHER	OTHER:
13 DESCRIPE PROPOSED OR CO		·	<u> </u>
Kerr-McGee Oil & Gas surface location of th 1592' FWL TO: 38 submitted remains amount approve	ompleted operations. Clearly show all performance of the Surface location is well. The surface location is 39' FNL 1632' FWL. All other in the same. No additional surfact in the original APD is anticipe, please contact the undersign	lly requests to change the changing FROM: 389' FNL aformation as originally ce disturbance from that eated. If you have any	
NAME (PLEASE PRINT)	PHONE NUMBER	TITLE	
Danielle Piernot	720 929-6156	Regulatory Analyst	
SIGNATURE N/A		<b>DATE</b> 5/18/2009	

# Kerr-McGee Oil & Gas Onshore LP

NBU #922-31CT

LOCATED IN UINTAH COUNTY, UTAH SECTION 31, T9S, R22E, S.L.B.&M.



PHOTO: VIEW FROM PIT CORNER "D" TO LOCATION STAKE

CAMERA ANGLE: SOUTHERLY

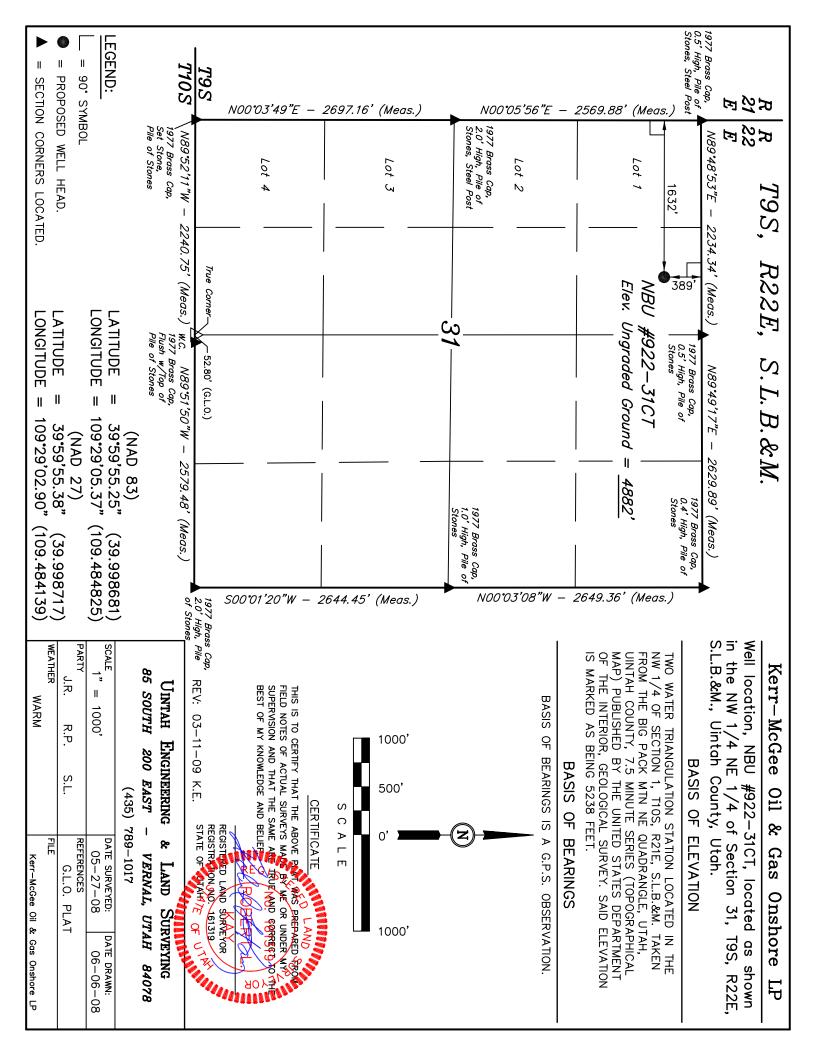


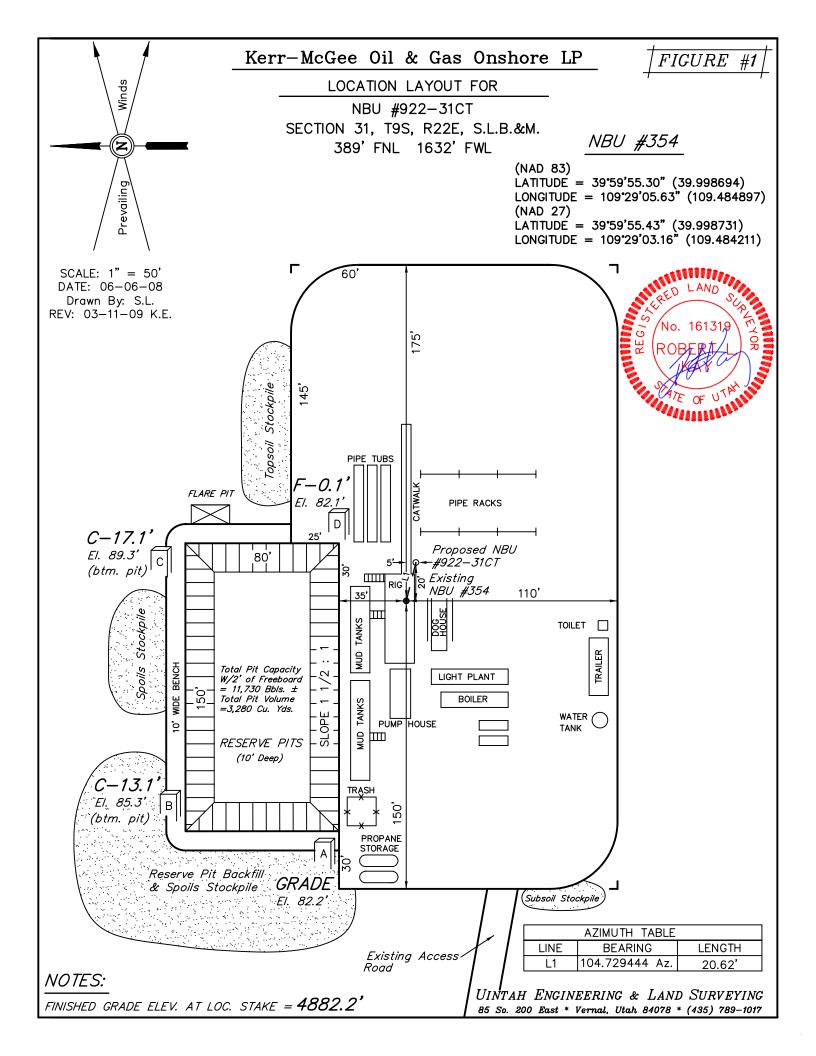
PHOTO: VIEW OF EXISTING ACCESS

CAMERAANGLE: EASTERLY



LOCATION				РНОТО	
TAKEN BY: L.K.	DRAWN BY: S.L	. REV	7: Z.L.0	3-11-09	

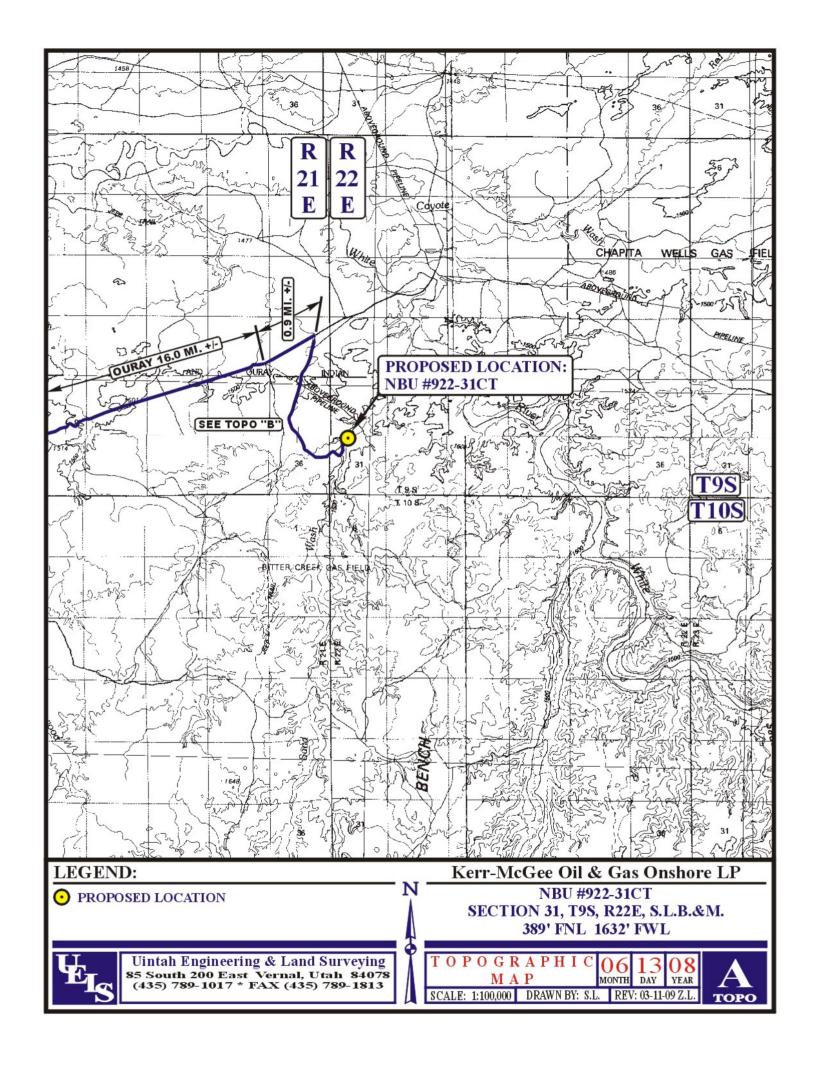


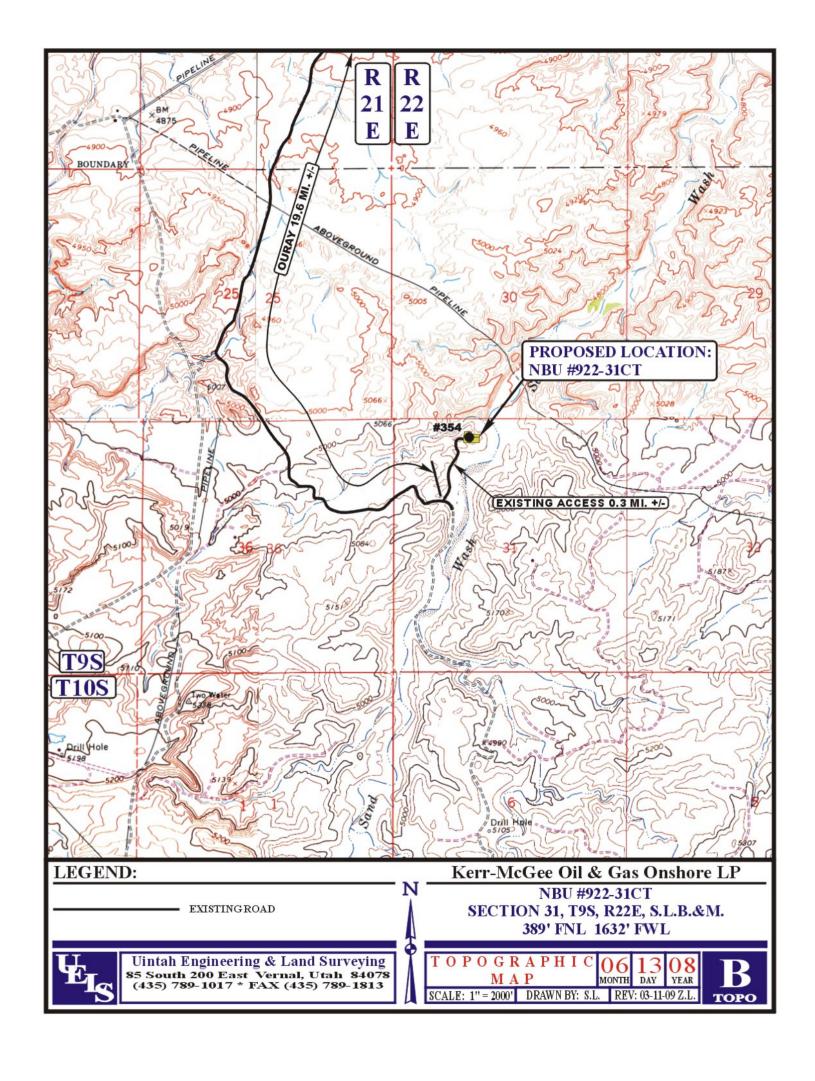


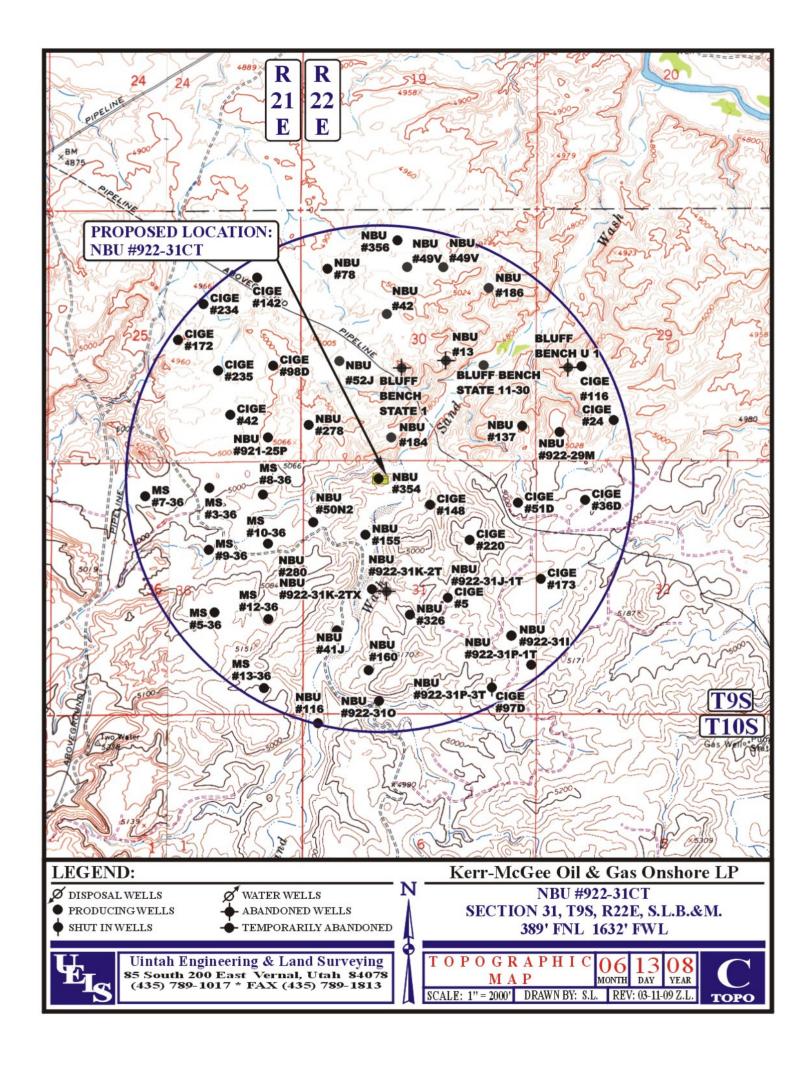
# Kerr-McGee Oil & Gas Onshore LP NBU #922-31CT SECTION 31, T9S, R22E, S.L.B.&M.

PROCEED IN A WESTERLY DIRECTION FROM VERNAL, UTAH ALONG U.S. HIGHWAY 40 APPROXIMATELY 14.0 MILES TO THE JUNCTION OF STATE HIGHWAY 88: EXIT LEFT AND PROCEED IN A SOUTHERLY DIRECTION APPROXIMATELY 17.0 MILES TO OURAY, UTAH; PROCEED IN A SOUTHERLY DIRECTION APPROXIMATELY 6.9 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE SOUTHEAST: TURN LEFT AND PROCEED IN A SOUTHEASTERLY, THEN EASTERLY DIRECTION APPROXIMATELY 5.0 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHWEST: TURN LEFT AND PROCEED IN A NORTHWESTERLY DIRECTION APPROXIMATELY 0.3 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHEAST; TURN RIGHT AND PROCEED IN A NORTHEASTERLY DIRECTION APPROXIMATELY 3.8 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHEAST: PROCEED IN A NORTHEASTERLY DIRECTION APPROXIMATELY 0.9 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE SOUTHWEST; TURN RIGHT AND PROCEED IN A SOUTHWESTERLY, THEN SOUTHEASTERLY DIRECTION APPROXIMATELY 2.7 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHEAST; TURN LEFT AND PROCEED IN A NORTHEASTERLY, THEN EASTERLY DIRECTION APPROXIMATELY 0.3 MILES NBU #354 AND THE PROPOSED LOCATION.

TOTAL DISTANCE FROM VERNAL, UTAH TO THE PROPOSED WELL LOCATION IS APPROXIMATELY 50.9 MILES.







Sundry Number: 1-9474 Approval of this: 43047502260000

Action is Necessary

	STATE OF UTAH		FORM 9					
	DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MININ	G	5.LEASE DESIGNATION AND SERIAL NUMBER: UTU-0464					
SUNDF	RY NOTICES AND REPORTS OF	N WELLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:					
Do not use this form for proposition-hole depth, reenter plu DRILL form for such proposals.	7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES							
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 922-31CT					
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONS	HORE, L.P.		9. API NUMBER: 43047502260000					
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th S	PHONE N treet, Suite 600, Denver, CO, 80217 3779	720 929-6515 Ext	9. FIELD and POOL or WILDCAT: NATURAL BUTTES					
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0389 FNL 1632 FWL			COUNTY: UINTAH					
QTR/QTR, SECTION, TOWNSHI Qtr/Qtr: NENW Section: 31	IP, RANGE, MERIDIAN: Township: 09.0S Range: 22.0E Meridian: S		STATE: UTAH					
11. CHE	CK APPROPRIATE BOXES TO INDICATE N	IATURE OF NOTICE, REPORT,	OR OTHER DATA					
TYPE OF SUBMISSION		TYPE OF ACTION						
	ACIDIZE	ALTER CASING	CASING REPAIR					
NOTICE OF INTENT Approximate date work will start:	☐ CHANGE TO PREVIOUS PLANS	CHANGE TUBING	☐ CHANGE WELL NAME					
10/17/2011	☐ CHANGE WELL STATUS	COMMINGLE PRODUCING FORMATIONS	CONVERT WELL TYPE					
SUBSEQUENT REPORT	☐ DEEPEN ☐	FRACTURE TREAT	□ NEW CONSTRUCTION					
Date of Work Completion:	OPERATOR CHANGE	PLUG AND ABANDON	PLUG BACK					
	☐ PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE	✓ RECOMPLETE DIFFERENT FORMATION					
SPUD REPORT Date of Spud:	REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON					
Julio di Spuui	TUBING REPAIR	VENT OR FLARE	□ water disposal					
DRILLING REPORT	□ WATER SHUTOFF	SI TA STATUS EXTENSION	APD EXTENSION					
DRILLING REPORT Report Date:								
		OTHER	OTHER:					
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.  The Operator requests approval to recomplete the subject well to the Wasatch formation. The Operator requests approval to commingle the recompleted Wasatch formation with the existing Mesaverde formation. Please see the attached procedure. Thank you.  Accepted by the Utah Division of Oil, Gas and Mining  Date: 10/19/20-1  By:								
NAME (PLEASE PRINT) Andy Lytle	<b>PHONE NUMBER</b> 720 929-6100	TITLE Regulatory Analyst						
SIGNATURE N/A		<b>DATE</b> 10/14/2011						

# Greater Natural Buttes Unit



#### **NBU 922-31CT**

RE-COMPLETIONS PROCEDURE

DATE:10/11/2011 AFE#:2064876 API#:4304750226

**USER ID:OOT937** (Frac Invoices Only)

COMPLETIONS ENGINEER: Zachary Garrity, Denver, CO

(720)-929-6180 (Office) (406)-781-6427 (Cell)

SIGNATURE:

**ENGINEERING MANAGER: JEFF DUFRESNE** 

SIGNATURE:

# REMEMBER SAFETY FIRST!

Name: NBU 922-31CT

Location: NE NW Sec 31 T9S R22E

**LAT: 39.998681 LONG: -109.484825 COORDINATE:** *NAD83 (Surface Location)* 

**Uintah County, UT** 

Date: 10/11/2011

**ELEVATIONS:** 4882' GL 4900' KB Frac Registry TVD: 9331

**TOTAL DEPTH:** 9335' **PBTD:** 9285'

**SURFACE CASING:** 9 5/8", 36# J-55 ST&C @ 2269' **PRODUCTION CASING:** 4 1/2", 11.6#, I-80 LT&C @ 9330'

Marker Joint 4500-4518'

#### **TUBULAR PROPERTIES:**

	BURST	COLLAPSE	DRIFT DIA.	CAPACITIES		
	(psi)	(psi)	(in.)	(bbl/ft)	(gal/ft)	
2 3/8" 4.7# J-55	7,700	8,100	1.901"	0.00387	0.1624	
tbg						
4 ½" 11.6# I-80	7780	6350	3.875"	0.0155	0.6528	
(See above)						
2 3/8" by 4 ½"				0.0101	0.4227	
Annulus						

#### TOPS: BOTTOMS:

1214' Green River Top

1554' Bird's Nest Top

1936' Mahogany Top

4502' Wasatch Top 7087' Wasatch Bottom

7087' Mesaverde Top 9335' Mesaverde Bottom (TD)

**T.O.C.** @ 1970' Cutters CBL 1/12/2010

\*Based on latest interpretation of CBL

#### **GENERAL**:

- A minimum of 6 tanks (cleaned lined 500 bbl) of recycled water will be required. Note: Use biocide in tanks and the water needs to be at least 45°F at pump time.
- All perforation depths are from Bakers Induction-Density-Neutron log dated 1/2/2010
- 3 fracturing stages required for coverage.
- Procedure calls for 4 CBP's (8000 psi).
- Calculate open perforations after each breakdown. If less than 60% of the perforations appear to be open, ball out with 15% HCl.
- Pump scale inhibitor at 3 gpt (in pad and until 1.25 ppg ramp up is reached) and 10 gpt in all flushes except the final stage. Remember to pre-load the casing with scale inhibitor for the very first stage with 10 gpt.
- 30/50 mesh Ottawa sand, **Slickwater frac**.
- Maximum surface pressure 6200 psi.

- Flush volumes are the sum of slick water and acid used during displacement (include scale inhibitor as mentioned above). Stage acid and scale inhibitor if necessary to cover the next perforated interval.
- Call flush at 0 PPG @ inline densiometers. Slow to 5 bbl/min over last 10-20 bbls of flush. Flush to top perf.
- If distance between plug and top perf of previous stage is less than 50', it is considered to be tight spacing over flush stage by 5 bbls (from top perf)
- Tubing Currently Landed @~8,714
- Originally completed on 1/25/2010

#### **Existing Perforations:**

PERFORATIONS	<del></del>					
Formation	Zone	Тор	Btm	spf	Shots	Date
MESA VERDE		7118	7128	4	40	01/26/2010
MESA VERDE		7182	7184	4	8	01/26/2010
MESA VERDE		7234	7238	4	16	01/26/2010
MESA VERDE		7287	7288	4	4	01/26/2010
MESA VERDE		7300	7303	4	12	01/26/2010
MESA VERDE		7398	7400	4	8	01/25/2010
MESA VERDE		7419	7422	4	12	01/25/2010
MESA VERDE		7466	7468	4	8	01/25/2010
MESA VERDE		7554	7557	4	12	01/25/2010
MESA VERDE		7659	7660	4	4	01/25/2010
MESA VERDE		7689	7690	4	4	01/25/2010
MESA VERDE		7740	7742	4	8	01/25/2010
MESA VERDE		7762	7763	4	4	01/25/2010
MESA VERDE		7812	7814	4	8	01/25/2010
MESA VERDE		7897	7899	4	8	01/25/2010
MESA VERDE		8046	8048	4	8	01/25/2010
MESA VERDE		8109	8111	4	8	01/25/2010
MESA VERDE		8183	8185	4	8	01/25/2010
MESA VERDE		8234	8238	4	16	01/25/2010
MESA VERDE		8387	8388	4	4	01/25/2010
MESA VERDE		8444	8446	4	8	01/25/2010
MESA VERDE		8502	8505	4	12	01/25/2010
MESA VERDE		8557	8558	4	4	01/25/2010
MESA VERDE		8628	8630	4	8	01/25/2010
MESA VERDE		8737	8738	4	4	01/25/2010
MESA VERDE		8748	8750	4	8	01/25/2010
MESA VERDE		8784	8786	4	8	01/25/2010
MESA VERDE		8857	8860	4	12	01/25/2010
MESA VERDE		8944	8946	4	8	01/25/2010
MESA VERDE		9171	9173	4	8	01/25/2010
MESA VERDE		9206	9212	4	24	01/25/2010
MESA VERDE		9257	9259	4	8	01/25/2010

#### **Relevant History:**

1/25/2010 - Original Completion

- **12/1/2010** Pulled plunger and spring. Ran scratcher and 1.9 broach; tubing was clean along with spring and plunger. Dropped titanium spring and viper plunger to bottom, RD moved off location.
- 3/31/2011 Pulled plunger and spring. Ran scratcher and 1.9 broach; tubing was clean along with spring and plunger. Dropped titanium spring and bypass plunger to bottom, RD moved off location.

#### **H2S History:**

Production Date	*	Gas (avg mcf/day)	Water (avg bbl/day)	Oil (avg bbl/day)	LGR (bbl/Mmcf)	Max H2S Seperator (ppm)
5/31/2010		1039.39	72.71	3.19	73.03	
6/30/2010		917.50	63.60	2.83	72.41	
7/31/2010		834.97	56.55	1.97	70.08	
8/31/2010		764.35	47.87	2.68	66.13	5.00
9/30/2010		705.87	40.97	2.80	62.00	
10/31/2010		664.03	46.48	2.48	73.74	
11/30/2010		611.20	38.90	2.07	67.03	
12/31/2010		581.23	42.90	1.77	76.87	0.00
1/31/2011		529.81	27.94	1.81	56.14	
2/28/2011		514.04	41.00	1.43	82.54	0.00
3/31/2011		476.10	30.77	1.52	67.82	
4/30/2011		498.47	34.80	1.33	72.49	
5/31/2011		502.58	39.00	1.19	79.97	
6/30/2011		418.97	24.90	1.13	62.14	
7/31/2011		476.81	39.42	0.74	84.23	
8/31/2011		448.32	31.45	0.61	71.52	15.00
9/30/2011		0.00	0.00	0.00	#NA	7.00

<u>PROCEDURE</u>: (If using any chemicals for pickling tubing or H2S Scavenging, have MSDS for all chemicals prior to starting work.)

- 1. MIRU. Control well with recycled water and biocide as required. ND WH, NU BOP's and test.
- 2. If the tubing is below the proposed CBP depth, TOOH with 2-3/8", 4.7#, J-55 (or N-80) tubing (currently landed at ~8,714'). Visually inspect for scale and consider replacing if needed.
- 3. If tbg looks ok consider running a gauge ring to 6065 (50' below proposed CBP). Otherwise P/U a mill and C/O to 6065 (50' below proposed CBP).
- 4. Set 8000 psi CBP at ~ 6015'. ND BOPs and NU frac valves. Test frac valves and casing to 1000 and 3500 psi for 15 minutes each and to 6200 psi for 30 minutes. As per standard operating procedure install steel blowdown line to reserve pit from 4-1/2" X 9-5/8" annulus. Lock **OPEN** the Braden head valve. Annulus will be monitored throughout stimulation. If release occurs, stimulation will be shut down. Well conditions will be assessed and actions taken as necessary to secure the well. UDOGM will be notified if a release to the annulus occurs.
- 5. Perf the following with 3-3/8" gun, 23 gm, 0.36"hole:

Zone From To spf # of shots WASATCH 5974 5980 4 24

- 6. Breakdown perfs and establish injection rate (<u>include scale inhibitor in fluid</u>). Spot 250 gals of 15% HCL and let soak 5-10 min. Fracture as outlined in Stage 1 on attached listing. Under-displace to ~5974' and trickle 250gal 15% HCL w/ scale inhibitor in flush.
- 7. Set 8000 psi CBP at ~5,642'. Perf the following 3-3/8" gun, 23 gm, 0.36"hole:

Zone From To spf # of shots WASATCH 5586 5592 4

- 8. Breakdown perfs and establish injection rate. Fracture as outlined in Stage 2 on attached listing. Under-displace to ~5586' and trickle 250gal 15% HCL w/ scale inhibitor in flush.
- 9. Set 8000 psi CBP at ~5,430'. Perf the following with 3-3/8" gun, 23 gm, 0.36" hole:

Zone From To spf # of shots WASATCH 5238 5242 4 16 WASATCH 5378 5380 4 8

- 10. Breakdown perfs and establish injection rate. Fracture as outlined in Stage 3 on attached listing. Under-displace to ~5238' andflush only with recycled water.
- 11. Set 8000 psi CBP at~5,188'.
- 12. ND Frac Valves, NU and Test BOPs.
- 13. TIH with 3 7/8" mill, pump open sub, XN nipple and tubing.
- 14. Mill 3 plugs and clean out to a depth of 5990'.
- 15. Land tubing at 5570', drop ball and pump open sub. Flow back completion load. RDMO
- 16. MIRU, POOH tbg and mill. TIH with POBS and mill.
- 17. Mill last plug @ 6015' clean out to PBTD at 9285'. Land tubing at  $\pm 8,714$ ' pump off bit and bit sub. This well WILL be commingled at this time.
- 18. Clean out well with foam and/or swabbing unit until steady flow has been established from completion.
- 19. Leave surface casing valve open. Monitor and report any flow from surface casing. RDMO

For design questions, please call Zachary Garrity, Denver, CO (720)-929-6180 (Office) (406)-781-6427 (Cell)

For field implementation questions, please call Jeff Samuels, Vernal, UT (435)-781-7046 (Office)

### NOTES:

If using any chemicals for pickling tubing or H2S Scavenging, have MSDS for all chemicals prior to starting work

Verify that the Braden head valve is locked OPEN.

Name NBU 922-31CT - Recomplete Perforation and CBP Summary

	1	Per	rforations					
Stage	Zones	Top, ft	Bottom, ft	SPF	Holes	Frac	ture Cover	age
1	1 WASATCH	5974	5980	4	24	5970.5	to	5990.5
	# of Perfs/stage				24	CBP DEPTH	5,642	
2	2 WASATCH	5586	5592	4	24	 5575.5	to	5600.5
	# of Perfs/stage				24	CBP DEPTH	5,430	
3	WASATCH	5238	5242	4	16	5217	to	5247.5
	WASATCH	5378	5380	4	8	 5366.5	to	5385
	# of Perfs/stage				24	CBP DEPTH	5,188	
	Totals			ı	72			

acturing Schedules ame NBU 922-31CT - ickwater Frac	- Recomp	lete C	opy t	to new b	ook	1		Recomplete? Pad?	Y			Swabbing Days Production Log DFIT	0		er of swabbin nning a Produ er of DEITs			ompletes			
	Md-Ft		Perfs	,		- 	Rate	ACTS?	N	Final	Fluid	Volume	Cum Vol	Volume	Cum Vol	Fluid	Sand	Sand	Cum. Sand	Footage from	Sca Inhil
_ '			Т								Fluid					% of				_	
age Zone	of Pay	Top, fl	t. B	ot., ft	SPF	Holes	ВРМ	Туре	ppg	ppg		gals	gals	BBLs	BBLs	frac	% of frac	lbs	lbs	CBP to Flush	gal
1 WASATCH	0.32	597	4	5980	4	24	Varied	Pump-in test			Slickwater		0	0	0						
WASATCH	0.00							ISIP and 5 min ISIP													37
WASATCH	0.00							Slickwater Pad			Slickwater	3,212	3,212			15.0%		0	0		10
WASATCH	0.00							Slickwater Ramp	0.25	1	Slickwater	10,707	13,919	255	331	50.0%	37.3%	6,692	6,692		3
WASATCH	0.00						50	Slickwater Ramp	1	2	Slickwater	7,495	21,413			35.0%	62.7%	11,242	17,934		(
WASATCH	0.00						50	Flush (4-1/2)			Slickwater	3,900	25,313	93	603				17,934		(
WASATCH	0.00							ISDP and 5 min ISDF			Slickwater										
WASATCH	0.00																				
WASATCH	0.00																		17,934		(
WASATCH	0.00												25,313	93	603						3
WASATCH	0.00																				1
WASATCH	0.00																				
WASATCH	0.00																				
WASATCH	0.00										Sand laden \	/olume	21,413								
													,				gal/md-ft	67,000	56,113	lbs sand/md-ft	t
	0.32		#	of Perfs	s/stage	24	ı							F	lush depth	5974		CBP depth		332	
							12.1	<< Above pump time	(min)												
2 WASATCH	0.34	558	6	5592	4	24	Varied	Pump-in test	<u> </u>		Slickwater		0	0	0						
WASATCH	0.00						0	ISIP and 5 min ISIP													
WASATCH	0.00						50	Slickwater Pad			Slickwater	3,237	3,237	77	77	15.0%	0.0%	0	О (		1
WASATCH	0.00						50	Slickwater Ramp	0.25	1	Slickwater	10,790	14,028	257	334	50.0%	37.3%	6,744	6,744		3
WASATCH	0.00						50	Slickwater Ramp	1	2	Slickwater	7,553	21,581	180		35.0%		11,330	18,074		
WASATCH	0.00							Flush (4-1/2)		_	Slickwater	3,647	25,227	87	601			,	18,074		
WASATCH	0.00							ISDP and 5 min ISDF			Slickwater		,						,		
WASATCH	0.00							lobi and c min lobi			Cilcitivator										
WASATCH	0.00																		18,074		
WASATCH	0.00												25,227	87	601				,		3
WASATCH	0.00												LO,LL!								7
WASATCH	0.00																				l '
WASATCH	0.00																				
WASATCH	0.00										Sand laden \	(-1	21,581								
WASATCH	0.00										Sand laden V	l	21,301				gal/md-ft	64,000	53 600	lbs sand/md-ft	!
	0.34		#	of Perfs	letage	24									lush depth	5586		CBP depth		156	ì
	0.54		"		Jacage	27	12.0	<< Above pump time	(min)						lusii ucpui	0000		depart	0,400	150	
3 WASATCH	1.72	523	8	5242	4	16	Varied	Pump-in test	()		Slickwater		0	0	0						
WASATCH	0.12	537		5380	4	"	Valled				Cherware		Ū	1	"						
WASATCH	0.12	331	_	3300	-	ľ	1 -	Slickwater Pad			Slickwater	5,225	5,225	124	124	15.0%	0.0%	0	0		1
WASATCH	0.00							Slickwater Ramp	0.25	1	Slickwater	17,415	22,640	415		50.0%	37.3%	10,885	10,885		
WASATCH	0.00							Slickwater Ramp	1	2	Slickwater	12,191	34,831	290		35.0%		18,286	29,171		`
WASATCH	0.00							Flush (4-1/2)	l '	~	Slickwater	3,419	38,250		911	55.0%	02.1%	10,200	29,171		
WASATCH	0.00						30	ISDP and 5 min ISDF		1	Slickwater	3,419	30,230	"	911				29,1/1		
WASATCH	0.00						1	TODE AND S MIN ISDE		1	Siickwater										
WASATCH	0.00						1			1									29,171		
WASATCH	0.00												38,250	81	911				29,171		
WASATCH	0.00												30,230	"	911						-
	0.00																				Ι ,
MACATCH	0.00																				
WASATCH												(-1	24 024								
WASATCH						I	1	1		1	Sand laden \	roiume	34,831				gal/md-ft	19.000	45.040	l	!
	0.00																				
WASATCH	0.00		4	of Porfs	lete e -	24									luch denth	5239				lbs sand/md-ft	ì
WASATCH			#	of Perfs	s/stage	24		Abovo ti	(mir)					F	lush depth	5238		CBP depth		50	
WASATCH WASATCH	0.00 1.83		#	of Perfs	s/stage		18.2	<< Above pump time	(min)			Total Fluid	88 701					CBP depth	5,188		
WASATCH	0.00		#	of Perfs	s/stage	24 72	18.2	<< Above pump time	(min)			Total Fluid	88,791 2,114	gals	lush depth 2,114						

Total Stages 3 stages Last Stage Flush 3,419 gals

Service Company Supplied Chemicals - Job Totals GPT Friction Reducer 43 gals @ 0.5 GPT GPT Surfactant gals @ 1.0 1.0 Clay Stabilizer 85 gals @ gal/stg GPT of aci GPT of aci GPT of aci 250 5.0 1.0 15% Hcl 750 gals @ gals @ Iron Control for acid 4 Surfactant for acid Corrosion Inhibitor for acid gals @ 2.0 gals @

Third Party Supplied Chemicals Job Totals - Include Pumping Charge if Applicable
Scale Inhibitor 260 gals pumped per schedule above
Biocide 43 gals @ 0.5 GPT

	NBU 922-31CT DIRECTIONAL SURVEY														
MD	TVD	EW	NS	INC	AZI		MD	TVD	EW	NS	INC	AZI			
14	14	0.0	0.0	0.0	0.0		3723	3720	-61.9	46.3	1.0	20.5			
162	162	0.2	-0.5	0.4	155.2		3817	3814	-61.5	47.3	0.4	25.7			
252	252	0.4	-0.7	0.1	73.6		3916	3913	-61.3	47.6	0.1	155.5			
342	342	0.0	-0.2	1.0	315.6		4005	4002	-61.3	47.1	0.6	181.3			
432	432	-1.8	1.5	2.1	312.4		4106	4103	-60.9	46.8	0.5	49.8			
522	522	-4.4	4.0	2.6	315.6		4201	4198	-60.3	47.2	0.4	82.4			
612	612	-7.5	6.7	2.7	306.1		4292	4289	-59.6	47.0	0.4	118.8			
702	702	-10.8	9.6	3.0	315.8		4385	4382	-59.1	46.5	0.5	159.0			
792	792	-14.2	13.1	3.1	316.8		4490	4487	-58.8	45.2	0.9	165.6			
882	881	-17.9	16.9	3.7	314.5		4581	4578	-58.3	43.7	1.1	163.6			
972	971	-22.1	21.0	3.8	314.0		4671	4668	-58.4	42.9	0.4	262.3			
1062	1061	-26.4	25.0	3.8	312.4		4765	4762	-58.9	42.6	0.4	225.5			
1152	1151	-31.1	29.0	4.1	308.4		4958	4955	-60.2	40.6	1.0	206.5			
1242	1241	-35.8	32.9	3.7	309.9		5046	5043	-60.3	40.0	0.3	65.6			
1332	1330	-40.0	36.1	2.9	304.3		5239	5236	-57.3	41.2	1.7	68.8			
1422	1420	-43.9	38.5	3.0	300.6		5426	5423	-52.6	42.4	1.3	85.7			
1512	1510	-47.5	40.8	2.4	303.5		5616	5613	-48.3	42.3	1.3	97.0			
1602	1600	-50.6	42.7	2.3	299.1		5806	5803	-43.9	41.1	1.4	113.3			
1692	1690	-53.9	44.2	2.4	289.9		5998	5995	-39.6	38.9	1.5	121.5			
1812	1810	-58.0	46.3	2.1	305.0		6182	6179	-35.5	35.8	1.8	130.3			
1902	1900	-60.2	47.7	1.3	300.1		6381	6378	-31.0	31.4	1.9	138.8			
1992	1990	-61.9	48.4	1.0	284.1		6470	6467	-29.9	29.8	0.7	163.5			
2082	2080	-63.6	48.7	1.2	274.9		6566	6563	-29.9	29.4	0.3	329.4			
2172	2170	-65.7	48.6	1.4	262.7		6660	6657	-30.2	29.8	0.4	313.5			
2232	2230	-67.1	48.4	1.3	257.5		6756	6753	-30.5	30.9	1.1	349.2			
2302	2300	-68.6	47.9	1.3	244.7		6946	6943	-30.7	34.0	0.9	6.8			
2392	2390	-70.4	46.7	1.4	228.2		7137	7134	-30.1	36.1	0.4	36.5			
2494	2492	-72.0	44.8	1.4	213.6		7314	7311	-29.1	36.3	0.4	123.8			
2583	2581	-73.1	42.8	1.6	204.5		7514	7511	-27.3	35.5	0.7	106.4			
2678	2676	-74.0	40.2	1.8	194.6		7702	7699	-25.3	33.5	1.1	149.6			
2777	2775	-74.9	37.1	1.9	196.4		7896	7893	-23.2	29.7	1.4	153.7			
2873	2871	-74.6	35.6	0.9	89.6		8056	8053	-21.5	27.1	0.9	134.8			
2968	2966	-72.6	36.7	2.0	47.9		8146	8143	-20.4	26.1	1.1	130.5			
3057	3055	-70.4	38.7	1.8	49.0		8341	8338	-18.1	23.3	1.1	150.9			
3158	3156	-68.0	40.5	1.7	57.9		8525	8522	-15.7	19.7	1.7	144.6			
3248	3246	-66.1	41.5	1.1	63.7		8717	8714	-10.6	14.2	2.8	131.8			
3346	3343	-64.6	42.0	0.7	84.5		8906	8902	-5.5	9.2	1.6	139.8			
3434	3431	-63.9	41.9	0.3	134.3		9102	9098	-1.1	5.4	1.9	122.9			
3538	3535	-63.4	42.5	0.9	25.4		9269	9265	1.4	3.3	0.4	162.8			
3626	3623	-62.7	44.2	1.6	20.8		9335	9331	1.5	2.8	0.4	162.8			

#### Acid Pickling and H2S Procedures (If Required)

#### \*\*PROCEDURE FOR PUMPING ACID DOWN TBG

WHEN FINDING SCALE IN TUBING THAT IS ACID SOLUBLE, ENSURE THAT PLUNGER EQUIPMENT IS REMOVED AND ABLE TO PUMP DOWN TBG. INSTALL A 'T' IN PUMP LINE W/2" VALVE THAT NALCO CAN TIE INTO. HAVE 60 BBLS 2% KCL MIXED W/ 10-15 GAL H2S SCAVENGER IN RIG FLAT TANK. (WE USED THE RIG FLAT TANK FOR MIXING CHEMICAL SO WE DIDN'T HAVE THE CHEMICAL IN ALL FLUIDS ON LOCATION, ONLY WHAT WE NEEDED TO PUMP DOWN HOLE)

- 1. PUMP 5-10 BBLS 2% KCL DOWN TBG (NALCO CANNOT PUMP AGAINST PRESSURE)
- 2. NALCO WILL PUMP 3 DRUMS HCL (31%) INTO PUMP LINE.
- 3. FLUSH BEHIND ACID WITH 10-15 BBL 2% KCL
- 4. PUMP 2—30 BBL 2% W/ H2S SCAVENGER DOWN TBG.
- 5. PUMP REMAINDER OF 2% W/ H2S SCAVENGER DOWN CASING AND SHUT WELL IN FOR MINIMUM OF 2 HRS.
- 6. OVER DISPLACE DOWN TBG AND CSG TO FLUSH ACID AND SCAVENGER INTO FORMATION
- 7. MONITOR TUBING FOR FLOW AND CASING FOR H2S NOW AS POOH W/ TUBING.

#### \*\* PROCEDURE FOR PUMPING H2S SCAVENGER WITHOUT ACID

PRIOR TO RIG MOVING ON OR AS RIG PULLS ONTO LOCATION. TEST CASING, TUBING AND SEPARATOR FOR H2S. IF FOUND MAKE SURE THAT PLUNGER SYSTEM IS REMOVED (IT IS POSSIBLE TO PUMP AROUND PLUNGERS BUT SOME WILL HAVE A STANDING VALVE IN SEATING NIPPLE).

- 1. MIX 10-15 GAL H2S SCAVENGER WITH 60-100 BBL 2% KCL IN RIG FLAT TANK.
- 2. PUMP 25 BBLS MIXTURE DOWN TUBING AND REST DOWN CASING. SHUT WELL IN FOR 2 HOURS.
- 3. IF WELL HAS PRESSURE AFTER 2 HOURS RETEST CASING AND TUBING FOR H2S.
- 4. FLUSH TUBING AND CASING PUSHING H2S SCAVENGER INTO FORMATION.
- 5. MONITOR TUBING FOR FLOW AND CASING FOR H2S NOW AS POOH W/ TUBING.

<sup>\*\*</sup> As per APC standard operating procedure, APC foreman will verify ALL volumes pumped and record on APC Volume Report Form

## **Key Contact information**

Completion Engineer

Zachary Garrity: 406-781-6427, 720-929-6180

Production Engineer

Jordan Portillo: 435/781-9785, 435/828-6221

Completion Supervisor Foreman

Jeff Samuels: 435-828-6515, 435-781-7046

Completion Manager

Jeff Dufresne: 720-929-6281, 303-241-8428

Vernal Main Office

435-789-3342

## Emergency Contact Information—Call 911

Vernal Regional Hospital Emergency: 435-789-3342

Police: (435) 789-5835

Fire: 435-789-4222

Form 3160-4 (August 2007)

# UNITED STATES DEPARTMENT OF THE INTERIOR

FORM APPROVED

			BUREAU						Γ								y 31, 2010
	WELL (	COMPI	LETION C	R R	ECO	MPL	ETIC	ON RE	PORT	AND	LOG				ease Serial JTU464	No.	-
la. Type o		Oil Well	_			•							···	6. If	Indian, Al	lottee o	r Tribe Name
b. Type c	of Completion	_	New Well er		ork Ov	ver	□ De	eepen	☐ Plu	g Back	<b>X</b> I	Diff. R	esvr.				ent Name and No.
2. Name o	f Operator					Cont	act: J/	AIME L.	SCHAF	RNOWS	ΚΕ				JTU63047 ease Name		ell No
KERR 3 Address	MCGEE OIL PO BOX	L & GAS	ONSHORE	,Mail:	JAIM	E.SCI	IARN	OWSKE	@ANA	DARKO	.COM			١	IBU 922-3	1CT	CH 140.
	DENVER	, CO 802				····		Ph:	720-92	o. (includ 9-6304	de area	code)		9. A	PI Well No	).	43-047-50226
4. Location At surfa	n of Well (Re ace NENW		ion clearly an L 1632FWL					-		s)*				_	IATURAL	BÚTT	
At top	prod interval									+ 100 /	2/1/0	١٨/ ١.٥	•	11. S	Sec., T., R., r Area Se	M., or	Block and Survey 9S R22E Mer SLB
At total			NL 1632FV								J-11-U	VV LO	il	12. 0	County or F		13. State
14. Date S	pudded		15. Da	ate T.D	. Read		at, 10			e Comple	ted		·		JINTAH Elevations	DF. K	UT B, RT, GL)*
10/27/	2009		01	/01/20	10				$\square D \&$		Read	y to Pı	od.		48	82 GL	-,,,
18. Total I	Depth:	MD TVD	9335 9331		19.	Plug I	Back T	`.D.:	MD TVD		286 282		20. Dep	th Bri	dge Plug S		MD TVD
21. Type I GR/CE	Electric & Oth BL/DHIL/ZDL	er Mecha /CN	mical Logs R	un (Su	bmit c	opy of	each)						ell core		No No	☐ Yes	s (Submit analysis)
			. 77									Direct	ional Su	rvey?	⊠ No ⊠ No		s (Submit analysis) s (Submit analysis)
23. Casing a	nd Liner Rec	ord (Repo	ort all strings 			D.		G4 G	1	T	201						
Hole Size	Size/G	rade	Wt. (#/ft.)	i .	op (D)	1	ttom ID)	Stage C De	emente pth		of Sks. of Cen		Slurry (BB		Cement	Top*	Amount Pulled
	-				-			-		╀							
	<b>†</b>					_		<del>                                     </del>		-							<u> </u>
										<del>                                     </del>	······································						
	_	·															
24. Tubing	Record		<u> </u>	<u> </u>		<u> </u>		<u> </u>		<u> </u>			<u> </u>			<u> </u>	<u> </u>
Size	Depth Set (N	(D) P	acker Depth	(MD)	Si	ze	Dept	th Set (M	D) i	Packer De	enth (N	(D)	Size	T De	epth Set (M	D) T	Packer Depth (MD)
2.375		5756											JILU		pen Bet (IVI		1 acker Depth (WD)
	ing Intervals	<u>-</u> -					26.	. Perforat	ion Rec	ord						· · · · · ·	
A)	ormation WASA	ATCU	Тор	5238	Во	ttom	_	Pe	rforated	Interval	FO 50		Size		No. Holes		Perf. Status
B)	MESAVE		-	7118		598 925				5238 <sup>-</sup> 7118 <sup>-</sup>		_	0.3 0.3			OPE	· · · · · · · · · · · · · · · · · · ·
C)				- 110		020	1			7110	10 92	39	0.3	00	312	OPE	IV
D)																	
	racture, Treat		ment Squeeze	e, Etc.			•										
	Depth Interva		980 PUMP 2	117 B	RISS	LICK F	120.8	64 286 1 5		mount ar			aterial				
	- 02	.00 10 0	3001.0 2	., , , , , ,	DEC O	LIOICI	20 0	04,200 EL	30/30	OTTAW	A SAIN						
													• • • • • • • • • • • • • • • • • • • •				
28 Produce	tion - Interval	<u> </u>															
Date First	Test	Hours	Test	Oil	· · ·	Gas	- 1	Water	Oil G	ravity		Gas		Product	ion Method		
Produced 02/08/2012	Date 02/09/2012	Tested 24	Production	BBL 11		MCF 1459	]1	BBL 97.0	Corr.			Gravity				MO ED	ONA 144551 1
Choke	Tbg. Press.	Csg.	24 Hr.	Oil		Gas		Water	Gas:0	Dil		Well St	atus		FLO	VS FR	OM WELL
Size 20/64	Flwg. 414 SI	Press. 740.0	Rate	BBL 1	ŀ	MCF 145		BBL 97	Ratio				GW				
	ction - Interva	<u> </u>			<b>I</b>		<u></u>										
Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL		Gas MCF		Water BBL	Oil G Corr.	ravity API		Gas Gravity		Product	ion Method		
Choke	Tha Descri	Con		Oil.		O		177							·		
Choke Size	Tbg. Press. Flwg.	Csg. Press.	24 Hr. Rate	Oil BBL		Gas MCF		Water BBL	Gas:0			Well St	itus				RECEIVE

Rate

Csg. Press.

Tbg. Press. Flwg.

SI

Gas MCF

Water BBL

Oil BBL

Ratio

28h Produ	uction - Inter	val C										
Date First	Test	Hours	Test	Oil	Gas	Water	Oil Gravity	lc		In 1		
Produced	Date	Tested	Production	BBL	MCF		Corr. API	Gas Grav	rity	Production Method		
Choke Size	Tbg, Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF		Gas:Oil Ratio	Well	Status			
28c. Produ	uction - Inter	val D			<u> </u>							
Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF		Oil Gravity Corr. API	Gas Grav	rity	Production Method		
Choke Size	Tbg, Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF		Gas:Oil Ratio	Weil	Status			
29. Dispos SOLD	sition of Gas	(Sold, used)	for fuel, vent	ed, etc.)	<u> </u>	-t <u>.</u>						
30. Summ	ary of Porou	s Zones (Inc	clude Aquife	rs):					31. For	mation (Log) M	arkers	
tests, 1	all important including dep coveries.	zones of po th interval t	prosity and c tested, cushi	ontents there on used, time	eof: Cored in e tool open,	ntervals and all flowing and sh	drill-stem ut-in pressure	s		, S,		
	Formation	l	Тор	Bottom		Descriptions,	Contents, etc	÷.		Name		Top Meas. Depth
Find a produ report	ction from V	recomplet Vasatch/Mo riginal Con	tion history esaverde p npletion Re	and perfora erforations. port. New	Casing in recompletio	t. Test informa i the well is as on perforation: 7118-9259'	proviously	atch	BIR MA WA	EEN RIVER RD'S NEST HOGANY ISATCH SAVERDE		1214 1554 1936 4502 7087
· ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			<b>5</b> ,									
	enclosed atta		(1.6.11									
	etrical/Mechandry Notice for					<ol> <li>Geologic Re</li> <li>Core Analys</li> </ol>	-		. DST Rep Other:	port	4. Direction	al Survey
			Elect	ronic Subm For KERR	ission #133	plete and correct 145 Verified by DIL & GAS Of	y the BLM W NSHORE,L,	ell Inform sent to th	nation Sy ie Vernal		ached instruction	ons):
Name	(please print)	JAIME L.	SUHARNO	WSKE		* *************************************	Title <u>R</u>	EGULAT	ORY AN	ALYST		
Signat	ure	(Electron	ic Submissi	on)			Date <u>0</u>	3/15/2012	2			
Title 18 U	.S.C. Section	1001 and 7	Γitle 43 U.S.	C. Section 1	212, make i	t a crime for an	y person knov	wingly and	l willfully	to make to any o	department or a	gency

## **US ROCKIES REGION**

## **Operation Summary Report**

 Well: NBU 922-31CT
 Spud Conductor: 10/27/2009
 Spud Date: 11/30/2009

 Project: UTAH-UINTAH
 Site: NBU 354 PAD
 Rig Name No: MILES 2/2

 Event: RECOMPL/RESEREVEADD
 Start Date: 12/30/2011
 End Date: 2/7/2012

Active Datum: RKB @4,900.00usft (above Mean Sea

UWI: NE/NW/0/9/S/22/E/31/0/0/26/PM/N/389.00/W/0/1,632.00/0/0

Level)			JOVE WEAT GE	~				1/0/0/20/1 10//14/309	1,002.00.00		
Date	Prince of the	Time art-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation		
12/27/2011	7:00	- 7:30	0.50	COMP	48		Р		HSM, RIGGING DWN & MOVING EQUIP		
	7:30	- 17:30	10.00	COMP	30	Α	P		RIG DWN OFF NBU 921-8F, MOVE TO LOCATION, MOVING TRUCK LOST DRIVE LINE ON HILL TO LOCATION, HAD TO GET MAINTAINER TO LOCATION TO PULL TRUCK UP HILL, RU RIG, ND WH NU BOPS, RIG UP FLOOR & TBG EQUIP, UNLAND TBG L/D HANGER SWI SDFN.		
12/28/2011	7:00	- 7:30	0.50	COMP	48		Р		HSM, CHECKING WELL FOR H2S & TRIPPING TBG.		
	7:30	- 13:00	5.50	COMP	31	1	P		SICP 450, SITP 450, BLEW WELL DWN KILL TBG W/ 20 BBLS T-MAC, KILL CSG W/ 20 BBLS T-MAC.POOH W/ 281 JTS 23/8 J-55 VISUALLY INSPECTING, & S.L.M,L/D 4 NO DRIFT HAD SCALE ON OD ON BTM JTS, SPRING WAS IN X/N.		
		- 15:30	2.50	COMP	34	1	P		RU JW RIH W/ 41/2 GAUGE RING TO 6065' POOH, RIH SET 41/2 8-K CBP @ 6015', POOH.		
		- 18:00	2,50	COMP	33	С	P		ND BOPS NU FV & X/O SPOOL. RU B&C, TEST CSG TO 1,006 PSI FOR 15 MIN, GAINED 63 PSI, TEST TO 3700 PSI FOR 15 MIN, LOST 48 PSI, TEST TO 6255 PSI FOR 30 MIN, LOST 64 PSI, RD B&C SWI SDFN.		
12/29/2011	7:00	- 7:30	0.50	COMP	48		Р		HSM, WORKING W/ FRAC & WIRELINE CREWS.		
	7:30	* 8:43	1,22	COMP	36	E	P		(STG #1) PU 41/2 & 31/8 EXP 23 GRM .36" HLS, 90 DEG PHASING, PERF WELL AS OF PROCEDURE. RU SUPERIOR, PRIME PUMPS & LINES, TEST LINES TO 7200 PSI, SET KICK OUTS @ 2 - 6,200 3 - 6,000 SET POPOFF @ 5800.		
									WHP 466 PSI, BRK 2259 PSI @ 3.3 BPM. ISIP 1388 PSI, FG .67. SPOT ACID ON PERFS LET SOAK FOR 5 MIN. CALC HOLES OPEN @ 44.3 BPM @ 4862 PSI = 63%		
					* *				HOLES OPEN. MP 5958 PSI, MR 51.2 BPM, AP 4100 PSI, AR 48.8 BPM ISIP 1381 PSI, FG .67 NPI - 7 PSI.		
	8:43	- 9:55	1.20	COMP	36	E	P		( STG #2 )PU 41/2 HAL 8-K CBP & 31/8 EXP 23 GRM .36" HLS, 90 DEG PHASING, SET CBP @ 5622', PERF WELL AS OF PROCEDURE.  WHP 318 PSI, BRK 2517 PSI @ 3.2 BPM. ISIP 1104 PSI, FG .67.  CALC HOLES OPEN @ 46.5 BPM @ 3404 PSI = 82% HOLES OPEN.  MP 4369 PSI, MR 50.5 BPM, AP 3676 PSI, AR 49.6 BPM ISIP 1264 PSI, FG .66 NPI 160 PSI.		

## **US ROCKIES REGION**

# **Operation Summary Report**

Well: NBU 922-	31CT			Spud Co	nductor:	10/27/200	)9	Spud Date: 11/30/2009
Project: UTAH-L	JINTAH			Site: NBU	J 354 PAI	D		Rig Name No: MILES 2/2
Event: RECOM	PL/RESE	REVEADD		Start Date	e: 12/30/2	2011		End Date: 2/7/2012
Active Datum: R	KB @4,9	00.00usft (ab	oove Mean S	ea	UWI: N	E/NW/0/9	)/S/22/E/3	1/0/0/26/PM/N/389.00/W/0/1,632.00/0/0
Level)  Date	35001000	Tima		Phase	Code		esa s	Language and the second se
<b></b>	<b>多年版。今年完</b>	Time art-End	Duration (hr)	riiase	Code	Sub Code	P/U	MD From Operation (usft)
	9:55	- 11:02	1.12	COMP	36	E	P	( STG #3 ) PU 41/2 HAL 8-K CBP & 31/8 EXP 23 GRM
								.36" HLS, 90 DEG PHASING, SET CBP @ 5410',
								PERF WELL AS OF PROCEDURE. WHP 317 PSI, BRK 2495 PSI @ 4.0 BPM. ISIP 1102
								PSI, FG .65.
								CALC HOLES OPEN @ 48.4 BPM @ 4561 PSI = 63%
								HOLES OPEN. MP 4558 PSI, MR 48.8 BPM, AP 3221 PSI, AR 46.2
								BPM
								ISIP 1764 PSI, FG .77 NPI 662 PSI
								TOTAL 64,286 LBS 30/50 WHITE
								TOTAL 2117 BBLS WTR
								TOTAL 325 GALS SCALE INH TOTAL 57 GALS BIOCIDE
	11:02	- 13:00	1.97	COMP	34	1	Р	(KILL PLUG) RIH W/ 41/2 HAL 8-K CBP & SET @
	12:00	40.00					•	5188' POOH SWI. RD WIRE LINE & FRAC CREW.
	13.00	- 16:00	3.00	COMP	31	1	Р	ND FV, NU BOPS, RIH W/ 37/8 BIT & PUMP OPEN
								SUB, 1.875 X/N & TBG TO KILL PLUG, RU DRLG EQUIP, SWI PREP TO D/O IN AM. SDFN.
12/30/2011	7:00	- 7:30	0.50	COMP	48		Р	HSM, DRILLING PLUGS & LANDING TBG.
	7:30	- 12:00	4.50	COMP	44	С	Р	BROKE CIRC CONVENTIONAL, TEST BOPS TO
								3,000# FOR 15 MIN NO PSI LOSS. RIH.
								C/O 5' SAND TAG 1ST PLUG @ 5188' DRL PLG IN 9
								MIN, 200# PSI INCREASE RIH.
								C/O 20' SAND TAG 2ND PLUG @ 5410' DRL PLG IN
								6 MIN, 100# PSI INCREASE RIH.
								C/O 25' SAND TAG 3RD PLUG @ 5622' DRL PLG IN
								8 MIN, 200# PSI INCREASE RIH.
								C/O TO 6,000', CIRC CLN, L/D 8 JTS, LAND TBG ON
								185 JTS 23/8 J-55. ND BOPS NU WH, PUMP OPEN
								BIT, TURN WELL OVER TO FB CREW. RDMOL
								KB= 18' (SURFACE OPEN
								W/ POPOFF )
								HANGER = .83' SICP 200 PSI, FTP 50 PSI
								185 JTS 23/8 J-55 = 5733.09'
								PUMP OPEN W/ 1.875 X/N = 4.20' ( TEST
								LINE TO HAL 9000 TO 2500 ) EOT @ 5756.12
								LOT W 3730.12
								TWTR 2217 BBLS
								TWR 260 BBLS TWLTR 1957 BBLS
								IVVETIV 1997 DDEG
								281 JTD HAULED OUT
								185 LANDED 96 TO RETURN TO SAMEULS YARD, 10 BAD, 86
								TO BE INSPECTED.

### 1 General

#### 1.1 Customer Information

Company	JS ROCKIES REGION	
Representative		
Address		

### 1.2 Well/Wellbore Information

Well	NBU 922-31CT	Wellbore No.	OH	
Well Name	NBU 922-31CT	Wellbore Name	NBU 922-31CT	
Report No.	1	Report Date	12/27/2011	
Project	UTAH-UINTAH	Site	NBU 354 PAD	
Rig Name/No.	MILES 2/2	Event	RECOMPL/RESEREVEADD	
Start Date	12/30/2011	End Date	2/7/2012	
Spud Date	11/30/2009	Active Datum	RKB @4,900.00usft (above Mean Sea Level)	
UWI	NE/NW/0/9/S/22/E/31/0/0/26/PM/N/389.00/W/	/0/1,632.00/0/0		

#### 1.3 General

Contractor	JW WIRELINE	Job Method	PERFORATE	Supervisor	STEVE WALL, SR.
Perforated Assembly	PRODUCTION CASING	Conveyed Method	WIRELINE		

1.5

Summary

### 1.4 Initial Conditions

Fluid Type	KCL WATER	Fluid Density	Gross Interval	5,238.0 (usft)-5,980.0 (usft	Start Date/Time	12/27/2012 12:00AM
Surface Press		Estimate Res Press	No. of Intervals	4	End Date/Time	12/27/2012 12:00AM
TVD Fluid Top		Fluid Head	Total Shots	72	Net Perforation Interval	18.00 (usft)
Hydrostatic Press		Press Difference	Avg Shot Density	4.00 (shot/ft)	Final Surface Pressure	
Balance Cond	NEUTRAL				Final Press Date	

### 2 Intervals

#### 2.1 Perforated Interval

Date Formation/ CCL@ Reservoir (usft)	CCL-T MD Top MD S (usft) (u	Base Shot Usft) Density (shot/ft)	Misfires/ Diamete Add. Shot r (in)	Carr Туре /Carr Manu	f Carr Ph Size (in)	hasing Ch	Manufacturer: We	arge Reason eight am)	Misrun
12/27/201 WASATCH/	5,238.0 5	5,242.0 4.00	0.360	EXPENDABLE/	3.125	90.00		23.00 PRODUCTIO	
2								N	
12:00AM							:		

### 2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr Type /Carr Manuf	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
12/27/201 2 12:00AM	WASATCH/			5,378.0	5,380.0	4.00		0.360	EXPENDABLE/	3.125	90.00			PRODUCTIO N	
12/27/201 2 12:00AM	WASATCH/			5,586.0	5,592.0	4.00		0.360	EXPENDABLE/	3.125	90.00		23.00	PRODUCTIO N	
12/27/201 2 12:00AM	WASATCH/			5,974.0	5,980.0	4.00		0.360	EXPENDABLE/	3.125	90.00		23.00	PRODUCTIO N	

### 3 Plots

#### 3.1 Wellbore Schematic



# DIVISION OF OIL, GAS AND MINING

# **SPUDDING INFORMATION**

Name of Cor	mpany:l	KERR-Mo	GEE	OIL &	<u>GAS ONSI</u>	<u>IORE, L</u>	<u>.P.</u>	
Well Name	:	NBU	922-3	1CT_				
Api No:	43-047-502	226			Lease T	ype: <b>F</b>	EDERAL	
Section 31	Township	<b>09S</b> R	ange_	22E	County	UINT	AH	
Drilling Cor	ntractor	PETE I	MART	IN DR	LG	_RIG #_	BUCKET	
SPUDDE	D:							
	Date	10/27/20	09	_				
	Time	7:00 AN	<u> </u>					
	How	DRY		_				
Drilling wi	ill Commen	ce:		·····				
Reported by		<u>J</u>	<u>AMES</u>	GOBE	R			_
Telephone #		(	435) 82	<u> 28-7024</u>	•			
Date	10/28/2009	Signo	ed	CHD				

	FORM APPROVED
	OMB No. 1004-0137
٠	Expires fulv 31 2010

August 2007)		RA Versi	CENE	DEFICE Expires	lo. 1004-0137 Jùly 31, 201	<i>1</i> 0
UNITED STATES  DEPARTMENT OF THE I  BUREAU OF LAND MAN		William Control Section 1	nana. Laba	5. Lease Serial No. UTU-0464		
APPLICATION FOR PERMIT TO I		- Robert 1994 A		6. If Indian, Alloted	or Tribe l	Name
la. Type of work:	R	BUREAU C	FLAN	7 If Unit or CA Agr UTU-63047A	eement, Na	ime and No.
lb. Type of Well: Oil Well Gas Well Other	S	ingle Zone 🔽 Multip	le Zone	8. Lease Name and NBU 922-31CT	Well No.	
Name of Operator     Kerr-McGee Oil & Gas Onshore, LP				9. API Well No. 43-047-	- 502	21.
3a. Address P.O. Box 173779, Denver, CO 80217-3779	3b. Phone No 720.929.6	). (include area code) 226		10. Field and Pool, or Natural Buttes Fie	Explorator	
4. Location of Well (Report location clearly and in accordance with any	v State requirer	nents.*)		11. Sec., T. R. M. or I	3lk, and Sur	rvey or Area
At surface NENW 389' FNL & 1592' FWL LAT 39.9987 At proposed prod. zone N/A			7)	Sec. 31, T 9S, R 2	:2E	
4. Distance in miles and direction from nearest town or post office*  19.9 miles southeast of Ouray, Utah				12. County or Parish Uintah		13. State UT
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of 206.97	acres in lease	17 Spacin Unit Wel	g Unit dedicated to this	well	
18. Distance from proposed location* 20' to nearest well, drilling, completed, applied for, on this lease, ft.			WYB00			
11. Elevations (Show whether DF, KDB, RT, GL, etc.) 4882' GL	22. Approx	mate date work will star	t*	23. Estimated duration 10 days	m	
	24. Atta	chments				
The following, completed in accordance with the requirements of Onshor	e Oil and Gas	Order No.1, must be at	tached to th	is form:		
Well plat certified by a registered surveyor.     A Drilling Plan.	radia da	4. Bond to cover the litem 20 above).  5. Operator certific		ns unless covered by an	ı existing b	ond on file (see
3. A Surface Use Plan (if the location is on National Forest System I SUPO must be filed with the appropriate Forest Service Office).	Lands, the	1 1		ormation and/or plans a	s may be re	equired by the
25. Signature		(Printed/Typed) n MoIntyre			Date 11/10/2	2008
itle						
Regulatory Analyst I				· · · · · · · · · · · · · · · · · · ·	T	
Approved by (Signature)	Name	(Printed Typed)			Date	
îtle .	Office					****
Application approval does not warrant or certify that the applicant holds onduct operations thereon. Conditions of approval, if any, are attached.	s legal or equ	itable title to those right	ts in the sub	ject lease which would	entitle the a	applicant to

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

\*(Instruction For Page V)ED

JUN 1 1 2009

DIV. OF OIL, GAS & MINING

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# UNITED STATES DEPARTMENT OF THE INTERIOR **BUREAU OF LAND MANAGEMENT**

**VERNAL FIELD OFFICE** 

VERNAL, UT 84078

(435) 781-4400



## CONDITIONS OF APPROVAL FOR APPLICATION FOR PERMIT TO DRILL

Company: Well No: API No:

Kerr McGee Oil & Gas

NBU 922-31CT

43-047-50226

Location:

NENW, Sec.31, T9S, R22E

UTU-0464 Lease No:

Agreement:

Natural Buttes Unit

Title	Name	Office Phone Number	Cell Phone Number
Petroleum Engineer:	Matt Baker	(435) 781-4490	(435) 828-4470
Petroleum Engineer:	Michael Lee	(435) 781-4432	(435) 828-7875
Petroleum Engineer:	Ryan Angus	(435) 781-4430	(435) 828-7368
Supervisory Petroleum Technician:	Jamie Sparger	(435) 781-4502	(435) 828-3913
Supervisory NRS:	Karl Wright	(435) 781-4484	
NRS/Enviro Scientist:	Holly Villa	(435) 781-4404	(435) 828-3544
NRS/Enviro Scientist:	James Hereford	(435) 781-3412	(435) 828-3546
NRS/Enviro Scientist:	Chuck Macdonald	(435) 781-4441	(435) 828-7481
NRS/Enviro Scientist:	Dan Emmett	(435) 781-3414	(435) 828-4029
NRS/Enviro Scientist:	Paul Percival	(435) 781-4493	(435) 828-7381
NRS/Enviro Scientist:	Anna Figueroa	(435) 781-3407	(435) 828-3548
NRS/Enviro Scientist:	Verlyn Pindell	(435) 781-3402	(435) 828-3547
NRS/Enviro Scientist:	Nathan Packer	(435) 781-3405	(435) 828-3545
NRS/Enviro Scientist:	David Gordon	(435) 781-4424	•
NRS/Enviro Scientist:	Christine Cimiluca	(435) 781-4475	
NRS/Enviro Scientist:	Lori Ford	(435) 781-4406	

Fax: (435) 781-3420

## A COPY OF THESE CONDITIONS SHALL BE FURNISHED TO YOUR FIELD REPRESENTATIVE TO INSURE COMPLIANCE

All lease and/or unit operations are to be conducted in such a manner that full compliance is made with the applicable laws, regulations (43 CFR Part 3160), and this approved Application for Permit to Drill including Surface and Downhole Conditions of Approval. The operator is considered fully responsible for the actions of his subcontractors. A copy of the approved APD must be on location during construction, drilling, and completion operations. This permit is approved for a two (2) year period, or until lease expiration, whichever occurs first. An additional extension, up to two (2) years, may be applied for by sundry notice prior to expiration.

#### NOTIFICATION REQUIREMENTS

Location Construction	- Forty-Eight (48) hours prior to construction of location and
(Notify Environmental Scientist)	access roads.
Location Completion	- Prior to moving on the drilling rig.
(Notify Environmental Scientist)	
Spud Notice	- Twenty-Four (24) hours prior to spudding the well.
(Notify Petroleum Engineer)	
Casing String & Cementing	- Twenty-Four (24) hours prior to running casing and
(Notify Supv. Petroleum Tech.)	cementing all casing strings.
BOP & Related Equipment Tests	- Twenty-Four (24) hours prior to initiating pressure tests.
(Notify Supv. Petroleum Tech.)	
First Production Notice	- Within Five (5) business days after new well begins or
(Notify Petroleum Engineer)	production resumes after well has been off production for more than ninety (90) days.

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# SURFACE USE PROGRAM CONDITIONS OF APPROVAL (COAs)

- If there is an active Gilsonite mining operation within 2 miles of the well location, operator shall notify the Gilsonite operator at least 48 hours prior to any blasting during construction.
- If paleontological materials are uncovered during construction, the operator is to immediately stop work and contact the Authorized Officer (AO). A determination will be made by the AO as to what mitigation may be necessary for the discovered paleontologic material before construction can continue.

#### SITE SPECIFIC CONDITIONS OF APPROVAL

• An Interim Surface Reclamation Plan for surface disturbance on the well pad, access road, and pipeline would be completed. At a minimum, this would include the Best Management Practice of the reshaping of the pad to the original contour to the extent possible; the re-spreading of the top soil up to the rig anchor points; and, reseeding the area using appropriate reclamation methods. The areas of the location not needed for production operations, including portions of the pad and the reserve pits, would have the stock piled top soil spread evenly over the reclaimed surface, and be seeded with the recommended seed mix shown below. If it is determined that this well site would be used as a multi-well site the interim reclamation would be delayed until all wells are constructed at the site.

Interim Reclamation seed mix		
Ephraim crested wheatgrass	Agropyron cristatum v. Ephraim	1 lbs. /acre
bottlebrush sqirreltail	Elymus elymoides	1 lbs. /acre
siberian wheatgrass	Agropyron fragile	2 lbs. /acre
western wheatgrass	Pascopyrum smithii	2 lbs. /acre
scarlet globemallow	Spaeralcea coccinea	1 lbs. /acre
shadscale	Atriplex confertifolia	2 lbs. /acre
fourwing saltbush	Atriplex canescens	2 lbs. /acre

Following well plugging and abandonment, the location, access roads, pipelines, and other facilities shall be reclaimed. All disturbed surfaces shall be reshaped to approximate the original contour; the top soil re-spread over the surface; and, the surface re-vegetated. The surface of approved staging areas where construction activities did not occur may require disking or ripping and reseeding.

- No construction, drilling, completion operations from February 1 through August 15 for Golden eagle.
- To protect Threatened and Endangered fish the following mitigation will be followed:
  - The best method to avoid entrainment is to pump from an off-channel location one that
    does not connect to the river during high spring flows. An infiltration gallery constructed in a
    BLM and Service approved location is best.
  - o If the pump head is located in the river channel where larval fish are known to occur, the following measures apply:
    - do not situate the pump in a low-flow or no-flow area as these habitats tend to concentrate larval fishes;

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• limit the amount of pumping, to the greatest extent possible, during that period of the year when larval fish may be present (see above); and

limit the amount of pumping, to the greatest extent possible, during the pre-dawn hours as larval drift studies indicate that this is a period of greatest daily activity.

o Screen all pump intakes with 1/2" mesh material.

o Report any fish impinged on the intake screen to the Service (801.975.3330) and the Utah Division of Wildlife Resources:

Northeastern Region 152 East 100 North, Vernal, UT 84078 Phone: (435) 781-9453

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## DOWNHOLE PROGRAM CONDITIONS OF APPROVAL (COAs)

#### SITE SPECIFIC DOWNHOLE COAs:

 Kerr McGee and their contractors shall strictly adhere to all operating practices in the SOP (version: July 28, 2008) along with all Oil and Gas rules and requirements listed in the Code of Federal Regulations and all Federal Onshore Oil and Gas Orders except where variances have been granted.

All provisions outlined in Onshore Oil & Gas Order #2 Drilling Operations shall be strictly adhered to. The following items are emphasized:

## DRILLING/COMPLETION/PRODUCING OPERATING STANDARDS

- The spud date and time shall be reported orally to Vernal Field Office within 24 hours of spudding.
- Notify Vernal Field Office Supervisory Petroleum Engineering Technician at least 24 hours in advance of casing cementing operations and BOPE & casing pressure tests.
- All requirements listed in Onshore Order #2 III. E. Special Drilling Operations are applicable for air drilling of surface hole.
- Blowout prevention equipment (BOPE) shall remain in use until the well is completed or abandoned. Closing unit controls shall remain unobstructed and readily accessible at all times.
   Choke manifolds shall be located outside of the rig substructure.
- All BOPE components shall be inspected daily and those inspections shall be recorded in the
  daily drilling report. Components shall be operated and tested as required by Onshore Oil &
  Gas Order No. 2 to insure good mechanical working order. All BOPE pressure tests shall be
  performed by a test pump with a chart recorder and <u>NOT</u> by the rig pumps. Test shall be
  reported in the driller's log.
- BOP drills shall be initially conducted by each drilling crew within 24 hours of drilling out from under the surface casing and weekly thereafter as specified in Onshore Oil & Gas Order No. 2.
- Casing pressure tests are required before drilling out from under all casing strings set and cemented in place.
- No aggressive/fresh hard-banded drill pipe shall be used within casing.
- Cement baskets shall not be run on surface casing.
- The operator must report all shows of water or water-bearing sands to the BLM. If flowing water
  is encountered it must be sampled, analyzed, and a copy of the analyses submitted to the BLM
  Vernal Field Office.
- The operator must report encounters of all non oil & gas mineral resources (such as Gilsonite, tar sands, oil shale, trona, etc.) to the Vernal Field Office, in writing, within 5 working days of each encounter. Each report shall include the well name/number, well location, date and depth

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(from KB or GL) of encounter, vertical footage of the encounter and, the name of the person making the report (along with a telephone number) should the BLM need to obtain additional information.

- A complete set of angular deviation and directional surveys of a directional well will be submitted to the Vernal BLM office engineer within 30 days of the completion of the well.
- While actively drilling, chronologic drilling progress reports shall be filed directly with the BLM,
   Vernal Field Office on a weekly basis in sundry, letter format or e-mail to the Petroleum
   Engineers until the well is completed.
- A cement bond log (CBL) will be run from the production casing shoe to the top of cement and shall be utilized to determine the bond quality for the production casing. Submit a field copy of the CBL to this office.
- Please submit an electronic copy of all other logs run on this well in LAS format to UT\_VN\_Welllogs@BLM.gov. This submission will supersede the requirement for submittal of paper logs to the BLM.
- There shall be no deviation from the proposed drilling, completion, and/or workover program as approved. Safe drilling and operating practices must be observed. Any changes in operation must have prior approval from the BLM Vernal Field Office.

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#### **OPERATING REQUIREMENT REMINDERS:**

- All wells, whether drilling, producing, suspended, or abandoned, shall be identified in accordance with 43 CFR 3162.6. There shall be a sign or marker with the name of the operator, lease serial number, well number, and surveyed description of the well.
- In accordance with 43 CFR 3162.4-3, this well shall be reported on the "Monthly Report of Operations" (Oil and Gas Operations Report ((OGOR)) starting with the month in which operations commence and continue each month until the well is physically plugged and abandoned. This report shall be filed in duplicate, directly with the Minerals Management Service, P.O. Box 17110, Denver, Colorado 80217-0110, or call 1-800-525-7922 (303) 231-3650 for reporting information.
- Should the well be successfully completed for production, the BLM Vernal Field office must be
  notified when it is placed in a producing status. Such notification will be by written
  communication and must be received in this office by not later than the fifth business day
  following the date on which the well is placed on production. The notification shall provide, as a
  minimum, the following informational items:
  - o Operator name, address, and telephone number.
  - Well name and number.
  - Well location (¼¼, Sec., Twn, Rng, and P.M.).
  - Date well was placed in a producing status (date of first production for which royalty will be paid).
  - o The nature of the well's production, (i.e., crude oil, or crude oil and casing head gas, or natural gas and entrained liquid hydrocarbons).
  - o The Federal or Indian lease prefix and number on which the well is located; otherwise the non-Federal or non-Indian land category, i.e., State or private.
  - Unit agreement and/or participating area name and number, if applicable.
  - o Communitization agreement number, if applicable.
- Any venting or flaring of gas shall be done in accordance with Notice to Lessees (NTL) 4A and needs prior approval from the BLM Vernal Field Office.
- All undesirable events (fires, accidents, blowouts, spills, discharges) as specified in NTL 3A will be reported to the BLM, Vernal Field Office. Major events, as defined in NTL3A, shall be reported verbally within 24 hours, followed by a written report within 15 days. "Other than Major Events" will be reported in writing within 15 days. "Minor Events" will be reported on the Monthly Report of Operations and Production.
- Whether the well is completed as a dry hole or as a producer, "Well Completion and Recompletion Report and Log" (BLM Form 3160-4) shall be submitted not later than 30 days after completion of the well or after completion of operations being performed, in accordance with 43 CFR 3162.4-1. Two copies of all logs run, core descriptions, and all other surveys or

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data obtained and compiled during the drilling, workover, and/or completion operations, shall be filed on BLM Form 3160-4. Submit with the well completion report a geologic report including, at a minimum, formation tops, and a summary and conclusions. Also include deviation surveys, sample descriptions, strip logs, core data, drill stem test data, and results of production tests if performed. Samples (cuttings, fluid, and/or gas) shall be submitted only when requested by the BLM, Vernal Field Office.

- All off-lease storage, off-lease measurement, or commingling on-lease or off-lease, shall have prior written approval from the BLM Vernal Field Office.
- Oil and gas meters shall be calibrated in place prior to any deliveries. The BLM Vernal Field
  Office Petroleum Engineers will be provided with a date and time for the initial meter calibration
  and all future meter proving schedules. A copy of the meter calibration reports shall be
  submitted to the BLM Vernal Field Office. All measurement facilities will conform to the API
  standards for liquid hydrocarbons and the AGA standards for natural gas measurement. All
  measurement points shall be identified as the point of sale or allocation for royalty purposes.
- A schematic facilities diagram as required by Onshore Oil & Gas Order No. 3 shall be submitted
  to the BLM Vernal Field Office within 30 days of installation or first production, whichever occurs
  first. All site security regulations as specified in Onshore Oil & Gas Order No. 3 shall be
  adhered to. All product lines entering and leaving hydrocarbon storage tanks will be effectively
  sealed in accordance with Onshore Oil & Gas Order No. 3.
- Any additional construction, reconstruction, or alterations of facilities, including roads, gathering lines, batteries, etc., which will result in the disturbance of new ground, shall require the filing of a suitable plan and need prior approval of the BLM Vernal Field Office. Emergency approval may be obtained orally, but such approval does not waive the written report requirement.
- No location shall be constructed or moved, no well shall be plugged, and no drilling or workover
  equipment shall be removed from a well to be placed in a suspended status without prior
  approval of the BLM Vernal Field Office. If operations are to be suspended for more than 30
  days, prior approval of the BLM Vernal Field Office shall be obtained and notification given
  before resumption of operations.
- Pursuant to Onshore Oil & Gas Order No. 7, this is authorization for pit disposal of water produced from this well for a period of 90 days from the date of initial production. A permanent disposal method must be approved by this office and in operation prior to the end of this 90-day period. In order to meet this deadline, an application for the proposed permanent disposal method shall be submitted along with any necessary water analyses, as soon as possible, but no later than 45 days after the date of first production. Any method of disposal which has not been approved prior to the end of the authorized 90-day period will be considered as an Incident of Noncompliance and will be grounds for issuing a shut-in order until an acceptable manner for disposing of said water is provided and approved by this office.
- Unless the plugging is to take place immediately upon receipt of oral approval, the Field Office
  Petroleum Engineers must be notified at least 24 hours in advance of the plugging of the well, in
  order that a representative may witness plugging operations. If a well is suspended or
  abandoned, all pits must be fenced immediately until they are backfilled. The "Subsequent
  Report of Abandonment" (Form BLM 3160-5) must be submitted within 30 days after the actual
  plugging of the well bore, showing location of plugs, amount of cement in each, and amount of
  casing left in hole, and the current status of the surface restoration.